ORDER NO.SIMMC0306022C3

Service Manual

Microwave Oven

NN-S453WF

NN-S553WF NN-K593MF / NN-K573MF NN-K573WF / NN-K543WF

QPQ(Australia, New Zealand)

HPE(Hong Kong)

YPQ(Singapore)

MPQ(Malaysia)

TPE(Thailand, Indonesia)

LPK(Philippines)

YTE(Others)

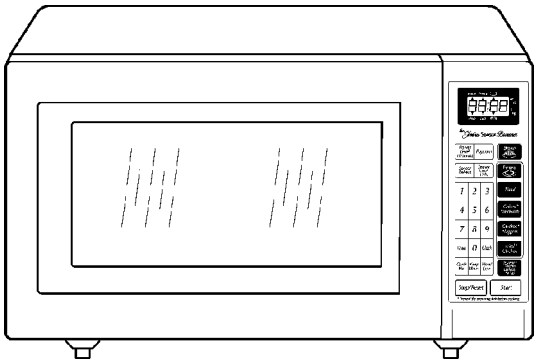
KTE(UAE, Egypt)

PTE(Iran)

KPQ(Kuwait, Doha, Qatar, Oman, Bahrain, Pakistan)

STM(Saudi Arabia)

ZPE(CIS Countries)



SPECIFICATIONS

Specification

Model		S453WF	S553WF	K593MF	K573MF/WF	K543WF
Power Source:		240V AC Single Phase, 50Hz _ _ _ _ _. For KPQ, MPQ, YPQ Models 230V~240V AC Single Phase, 50Hz _ _ For QPQ Models 220V AC Single Phase, 50Hz _ _ _ _ _. For KTE, ZPE, HPE, TPE, YTE,PTE Models 220V AC Single Phase, 50Hz/60Hz _ _ _ For STM Models 220V~230V AC Single Phase,60Hz _ _ _. For LPK Models				
Power Requirement:	Microwave	1000W	1000W	1000W	1000W	1000W
	Heater	——	——	1350W	1350W	1350W
Output:	Microwave(IEC705)	1100W	1100W	1100W	1100W	1100W
	Heater	——	——	1300W	1300W	1300W
Microwave Frequency:		2450MHz				
Timer:		99min.90sec				
Outside Dimensions:		510mm(D) x 380mm(W) x 304mm(H)				
Oven Cavity Dimensions:		359mm(D) x 352mm(W) x 217mm(H)				
Weight:		11.5kg-12.5kg				
PbF		This product with PbF				
Output power:IEC705-88 Test Procedure						
Specifications subject to change without notice.						

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
3. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
4. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the orginal design.

This service manual covers products for following markets.
When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.

QPQ	For Australia, New Zealand
HPE	For Hongkong
TPE	For Thailand, Indonesia
YPQ	For Singapore
MPQ	For Malaysia
LPK	For Phillipines
YTE	For Others
ZPE	For CIS Countries
KTE	For UAE, Egypt
PTE	For Iran
KPQ	For Kuwait, Doha, Qatar
	Oman, Bahrain, Pakistan
STM	For Saudi Arabia

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40˚C higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 370 ± 10˚C.
- Pb free solder will tend to splash when heated too high (about 600˚C).

Panasonic®

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. NEW H.V.

IT HAS:

1. **Very high voltage and high current circuits.**
   It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.
2. **Aluminum heat sink is energized with very high voltages and high heat energy.**
3. **Very high voltage may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.**

DO NOT:

* 1. **Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuit.**

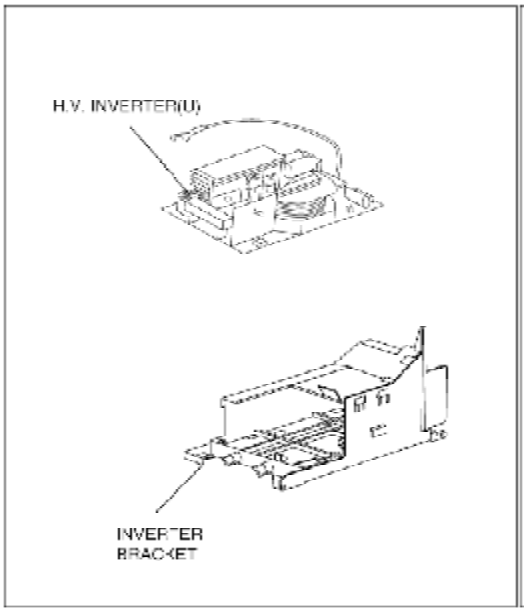
* 2. **Do not touch aluminum heat sink because it is energized with very high voltage and also is very hot in high heat energy.**

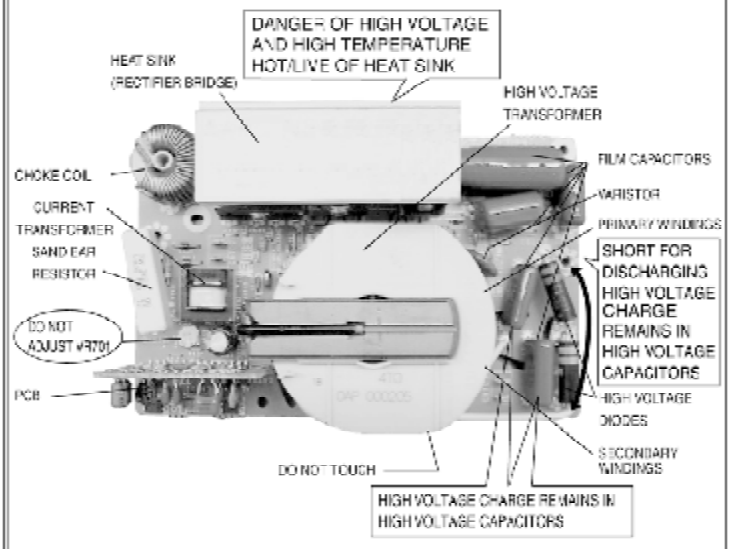
* 3. **Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.**

* 4. **Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.**

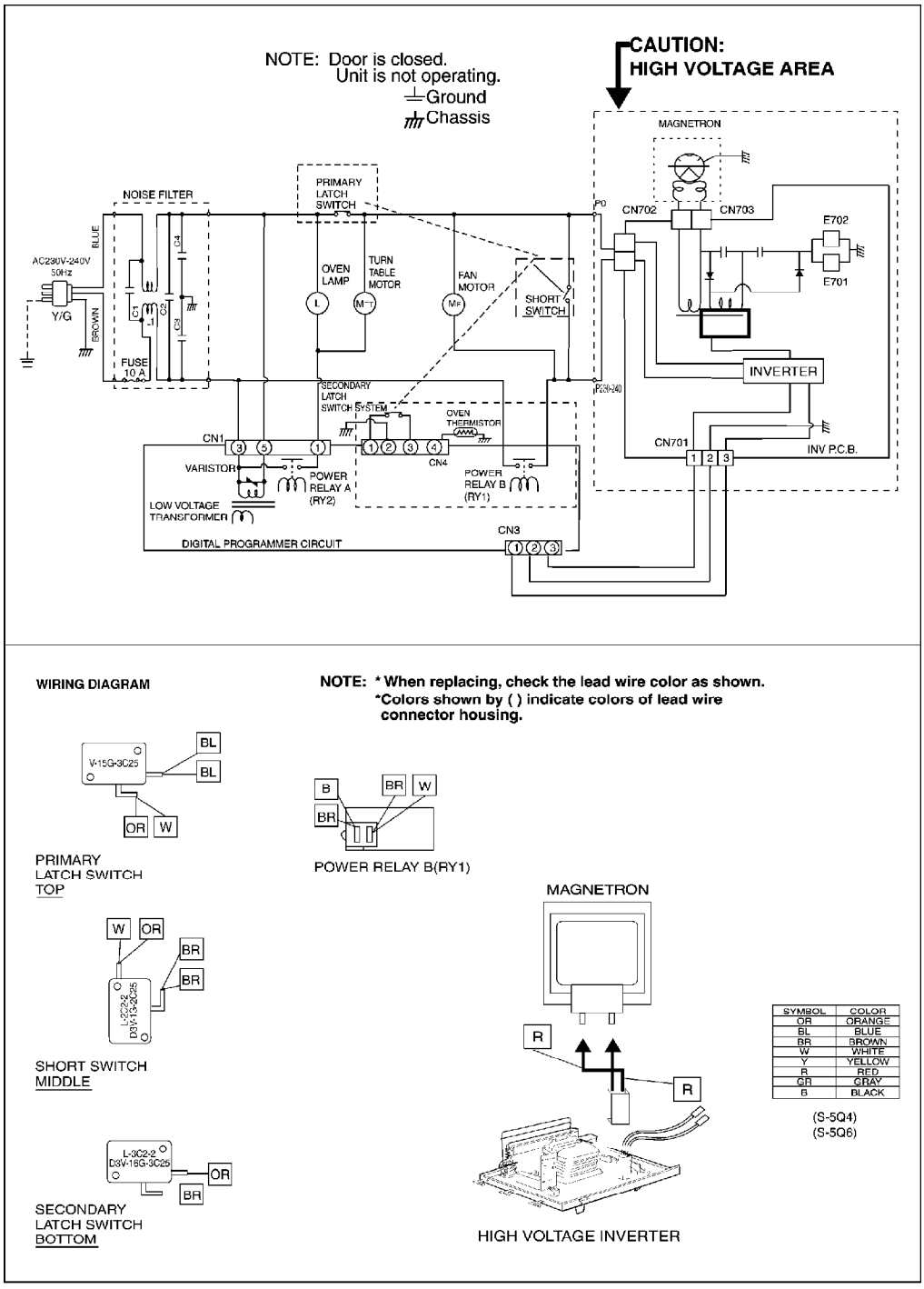
* 5. **Do not try to repair Inverter PCB because it is very dangerous to repair. Replace as a complete High Voltage Inverter Circuit unit.**

INVERTER POWER SUPPLY

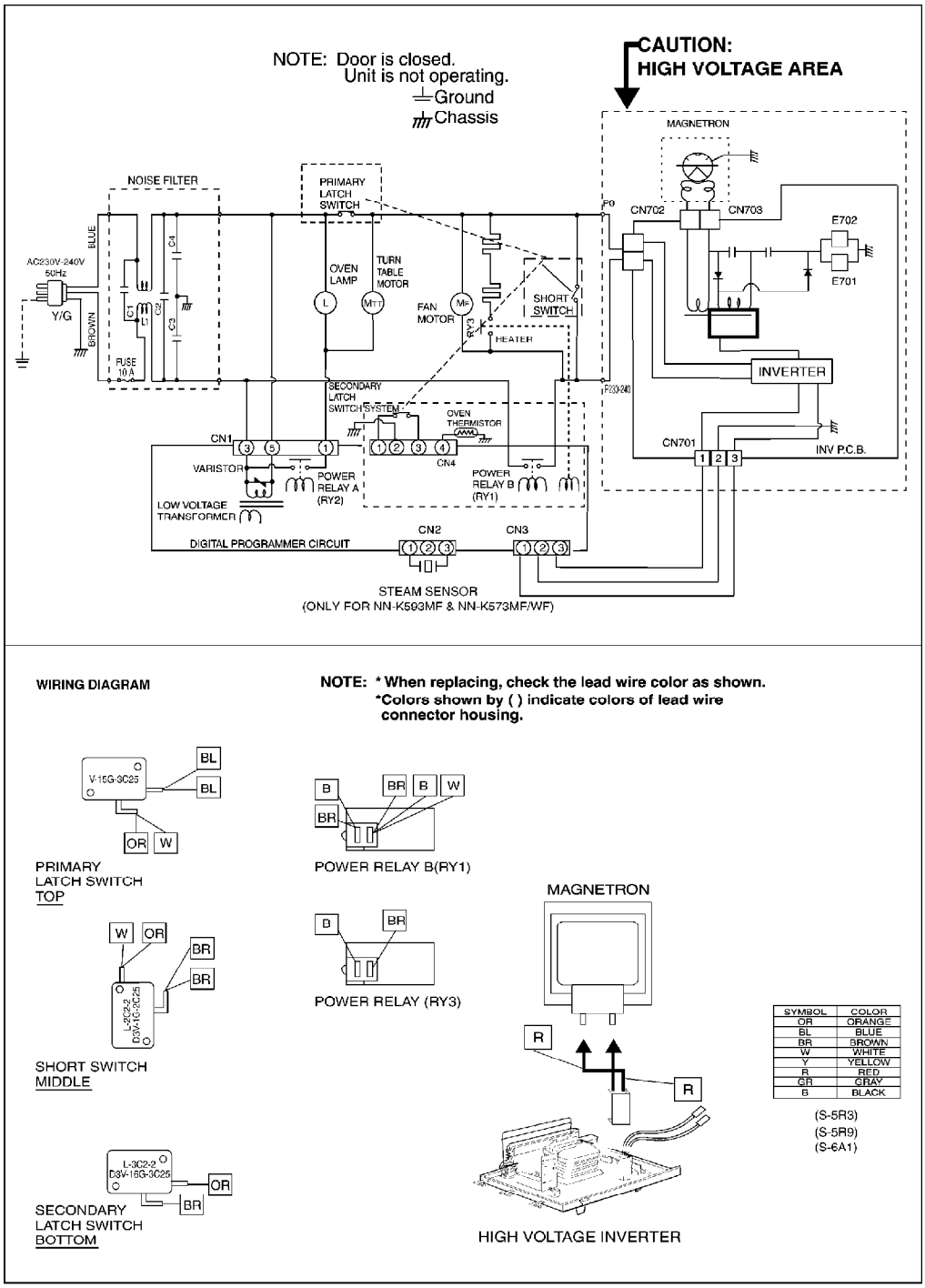




1. SCHEMATIC DIAGRAM (NN-S453WF & NN-S553WF)



2. SCHEMATIC DIAGRAM (NN-K593MF/K573/K543WF)



3. DESCRIPTION OF OPERATING SEQUENCE

3.1. Variable power cooking control

High Voltage Inverter Power supply (U) controls output power by the signal from Digital Programmer Circuit (DPC). Power relay stays ON for P3 to P10 and For P1 to P2, both inverter drive signal and power relay to control output power.

NOTE:

The ON/OFF time ratio does not correspond with the percentage of

microwave power since approximately 2 seconds are required for heating of magnetron filament.

Variable Power Cooking

POWER SETTING		OUTPUT POWER(%) APPROX.	ON-OFF TIME OF POWER RELAY (RY1)	
			ON(SEC)	OFF(SEC)
HIGH	P10	100%	22	0
	P9	90%	22	0
	P8	80%	22	0
MEDIUM-HIGH	P7	70%	22	0
MEDIUM	P6	60%	22	0
	P5	50%	22	0
	P4	40%	22	0
MEDIUM-LOW	P3	30%	22	0
	P2	20%	15	7
LOW	P1	10%	8	14
DEFROST	P3	30%	22	0

3.2. Inverter power supply circuit [NEW H.V.]

This Inverter Power Supply Circuit supplies 4,000V DC to the magnetron tube from the line voltage, 220-240V 50Hz/60Hz AC input. functions as the H.V. transformer, the H.V.capacitor and H.V.diode.

1. **The AC input voltage 220-240V 50Hz/60Hz is rectified to DC voltage immediately.**
2. **DC voltage will be supplied to the switching devices called IGBT. These devices will be switched ON-OFF by the 20 to 40 KHz PWM(pulse width modulation) signal from the microcomputer in the DPC.**
3. **This drives the High voltage transformer to increase up to 2,000V AC and approximately 3V AC by means of transformer.**
4. **Then the half-wave doubler voltage rectifier circuit, consisting of the H.V. diodes and Capacitors, generates the necessary 4,000V DC needed for the magnetron.**
5. **Output power of the magnetron tube is always monitored by the signal output from the current transformer built into the inverter circuit.**
6. **Then this signal will be fed back to the microcomputer in the DPC**

to determine operating conditions and output necessary to control PWM signal to the Inverter Power Supply to control output power.

3.3. Inverter turbo defrost

When this Auto Control feature is selected and the Start Pad is tapped:

1. The digital programer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving by categories.
2. When cooking time the display window has elapsed, the oven turns off automatically by a control signal from the digital programmer circuit.

4. CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is a high voltage, high current device. It is free from danger in ordinary use, though extreme care should be taken during repair.

Caution

Servicemen should remove their watches whenever working close to or replacing the magnetron.

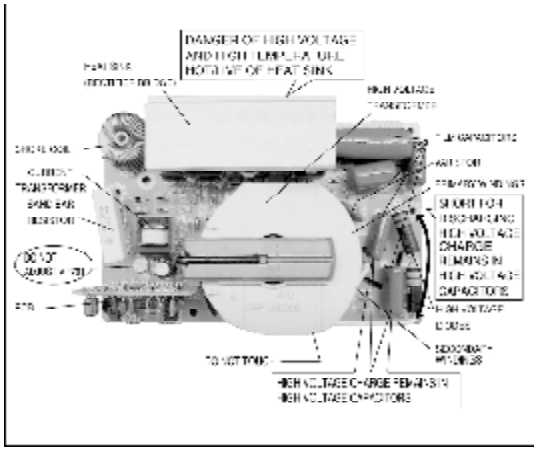
4.1. Check the grounding

Do not operate on a two wire extension cord. The microwave oven is designed to be grounded when used. It is imperative, therefore, to ensure the appliance is properly grounded before beginning repair work.

4.2. Inverter warnings

DANGER, HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LINE) OF THE INVERTER POWER SUPPLY (U)

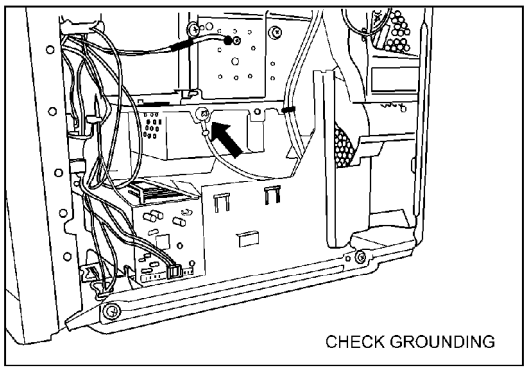
This high voltage inverter power supply handles very high voltage and current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair.
The aluminum heat sink is also energized with high voltage (HOT), so do not touch when the AC input terminals are energized. The power devices Collector is directly connected to the aluminum heat sink.
The aluminum heat sink may be HOT due to heat energy, therefore, extreme care should be taken during servicing.



H.V. Inverter warning

WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

Check the high voltage inverter power supply circuit grounding. The high voltage inverter power supply circuit board must have a proper chassis ground, the inverter grounding bracket must be connected to the chassis. If the inverter board is not grounded it will expose the user to very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter earth bracket.

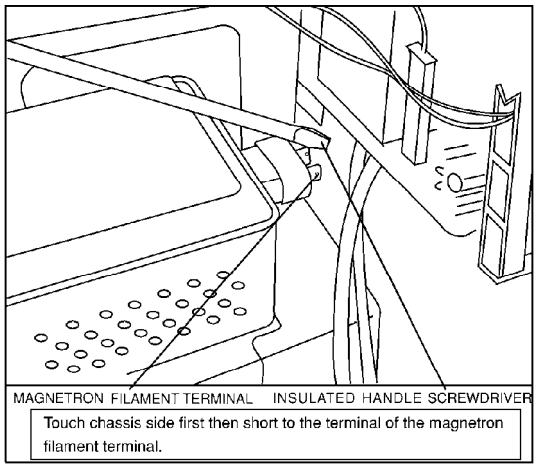


Grounding of the inverter circuit board

WARNING! DISCHARGE THE HIGH VOLATGE CAPACITORS

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please be sure to touch the chassis ground side first and then short to the output terminals.


MAGNETRON FILAMENT TERMINAL
INSULATED HANDLE SCREWDRIVER
Touch chassis side first then short to the terminal of the magnetron filament terminal.

Discharging the high voltage capacitors

WARNING

There is high voltage present with high current capabilities in the circuits of the primary and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with the oven energized. DO NOT measure the voltage in the high voltage circuit including the filament voltage of the magnetron.

WARNING

Never touch any circuit wiring with your hand or with an insulated tool during operation.

4.3. Part replacement.

When any part or component is to be replaced, always ensure that the power cord is removed from the wall outlet.

4.4. When the 10A fuse is blown due to the operation of the short switch:

WARNING

When the 10A 250V fuse is blown due to the operation of the interlock monitor switch, replace all of the components (primary latch switch, secondary latch switch, short switch and power relay B (RY1)).

1. **This is mandatory. Refer to “adjustments and measurements” for the location of these switches.**
2. **When replacing the fuse, confirm that it has the appropriate rating for these models.**
3. **When replacing faulty switches, be sure the mounting tabs are**

not bent, broken or deficient in their ability to hold the switches.

4.5. Avoid inserting nails, wire etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any holes or gaps, because such objects may work as an antenna and cause microwave leakage.

4.6. Confirm after repair

1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwaves might leak if screws are not properly tightened.
2. Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
3. Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage).

CAUTION MICROWAVE RADIATION

USE CAUTION NOT TO BECOME EXPOSED TO RADIATION FROM THE MICROWAVE MAGNETRON OR OTHER PARTS CONDUCTING MICROWAVE ENERGY

IMPORTANT NOTICE

The following components have potentials above 2000V while the appliance is operated.

- Magnetron
- High voltage transformer (Located on inverter (U))
- High voltage diodes (Located on inverter (U))
- High voltage capacitors (Located on inverter (U))

Pay special attention to these areas.

When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can exceed more than 5mW/cm^2. After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly installed.

4.7. Sharp edges

Caution

Please use caution when unpacking, installing or moving the unit, as some exposed edges may be sharp to the touch and cause injury if not handled with care.

5. DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

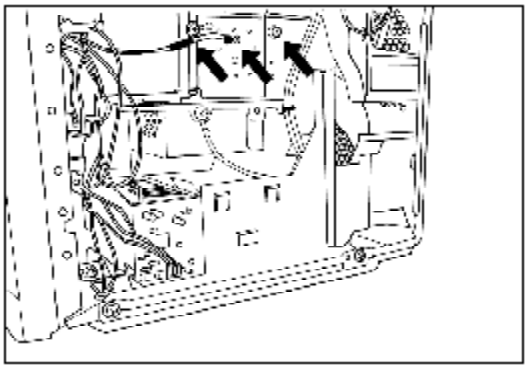
5.1. Magnetron

1. Discharge high voltage charge.
2. Remove 1 screw holding air guide A.
3. Remove 1 screw holding air guide F.
4. Remove 4 screws holding themistor.
5. Disconnect 2 high voltage lead wires from magnetron filament terminals.
6. Remove 4 screws holding the magnetron.

NOTE:

After replacement of the magnetron, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

CAUTION
When replacing the magnetron, be sure the antenna gasket is in place.



5.2. Digital programmer circuit (D.P.C) and membrane key board.

NOTE:

Before handing the D.P.C ensure that your body is connected to ground to discharge any electric charge.

1. Disconnect all connectors from D.P.C.
2. Remove 1 screw holding escutcheon base and slide the escutcheon base upward slightly.

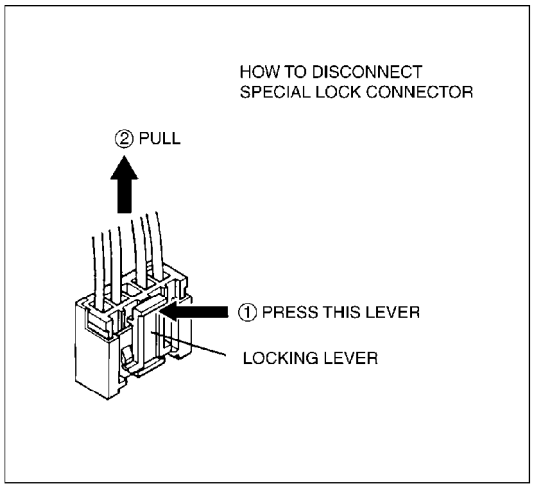
3. Remove 1 screw holding D.P.C.
4. Release lock of connector CN6 by pushing both levels to inside and pull them upward, and remove flat cable of membrane keyboard.
5. Separate D.P.C board from tabs on the escutcheon base and remove D.P.C board.

To replace membrane key board

6. Push the upper part of key board (display window portion) from back of escutcheon base and peel off escutcheon sheet and membrane key board completely from escutcheon base.

NOTE:

1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal. / 2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided. / 3. Alignment position of membrane key board is as follows; / Membrane key board: Right and upper edges / Escutcheon sheet: Right and upper edges



5.3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE:

Be sure to ground any static electric charge built up on your body before handling the D.P.C.

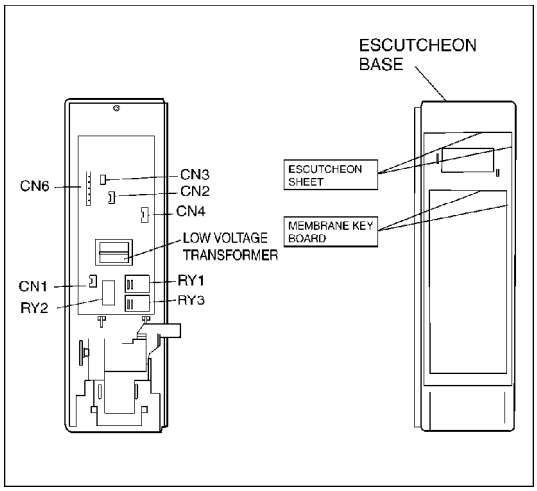
(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder

from the terminal pins of the low voltage transformer and/or power relays.

NOTE:

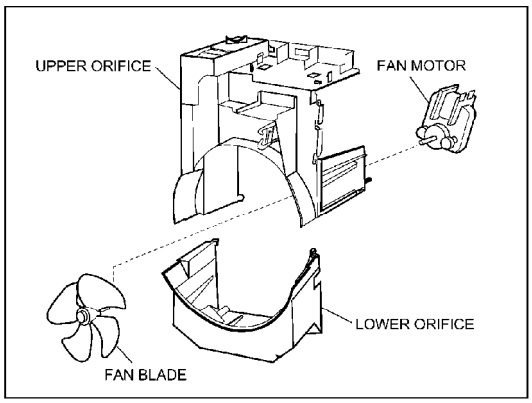
Do not use a soldering iron or desoldering tool of more than 30 watts on D.P.C contacts.

(B) With all the terminal pins cleaned and separated from D.P.C contacts, remove the defective transformer/power relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



5.4. Fan motor

1. Disconnect 2 lead wires from fan motor terminals.
2. Remove 1 screw located on oven attaching orifice assembly.
3. Remove orifice from oven assembly.
4. Remove 2 screws holding fan motor to oven assembly.
5. Remove fan blade from the fan motor shaft by pulling it straight out.



5.5. Door assembly

1. Remove door C from door E by carefully pulling outward starting

from upper right hand corner using a flat blade screwdriver.

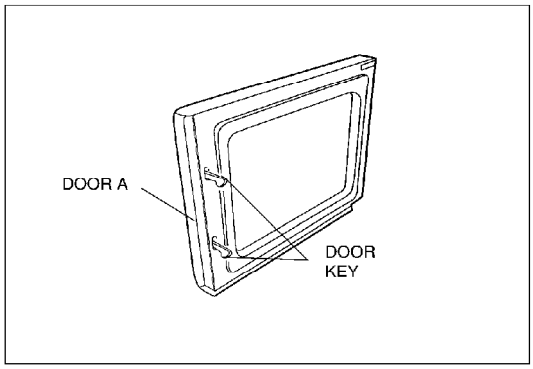
2. Separate door E from tabs on door A and remove door A.
3. Open Door E at the opening angle of approximately 10°(Note: The door cannot be removed if the opening angle is greater than 10°).
4. Remove the door E from its hinges by pushing the door E upward and out.
5. Remove door screen B from door A.
6. Remove door key and door key spring.
7. Place the door's lower hinge pin into the bottom hinge hole.
8. Use your left index finger to support the door's lower hinge pin while guiding the door's upper hinge pin into the top hinge hole.
9. Lower your finger to seat the door onto the hinges.
10. Replace other components.

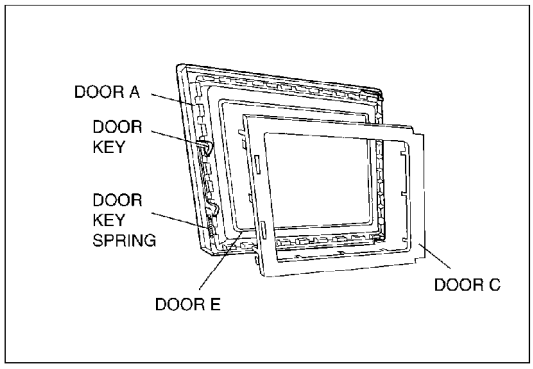
NOTE:

Door alignment is crucial. If door is misaligned, apply pressure until alignment is achieved.

NOTE:

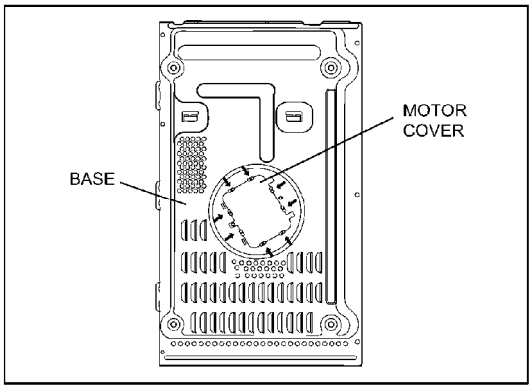
After replacement of the defective component parts of the door, reassemble, install, and perform microwave leakage test.

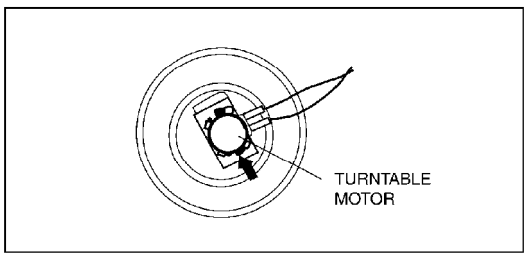




5.6. Turntable motor

1. **Remove the motor cover by cutting at the locations indicated by the arrows with a cutter.**
   NOTE:
   After removing the motor cover, be sure that cut portions are properly trimmed or bent to the inside so that no sharp edges will be exposed to outside.
2. **Disconnect 2 lead wires connected to the turntable motor.**
3. **Remove the turntable motor by removing screw.**
   NOTE:
   After replacing the new turntable motor and reconnecting the two lead wires, reinstall the motor cover by rotating it 180°, tucking the tabs into the base in the 2 provided slots, then screw the single tab to the base using a 4mm X 6mm screw (not provided). /



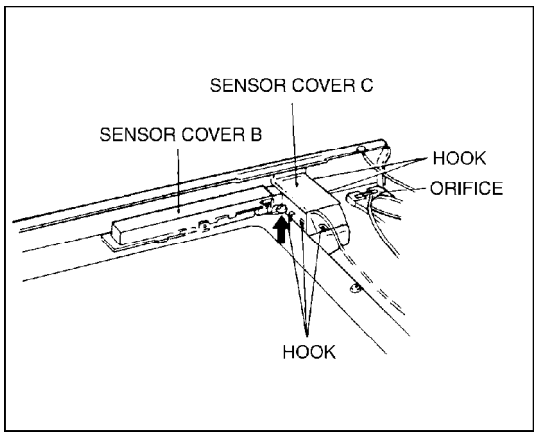


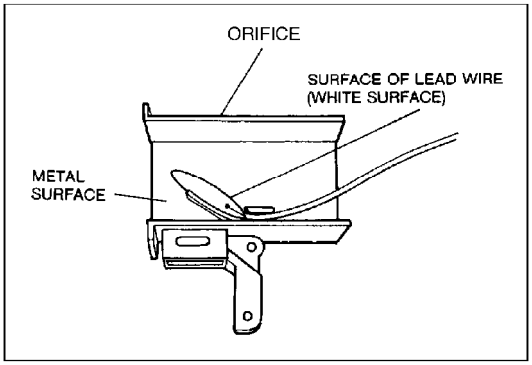
5.7. Steam sensor

1. Disconnect connector CN2 from digital programmer circuit board.
2. Disengage catch hooks on sensor cover c from orifice.
3. Remove steam sensor from orifice.

NOTE:

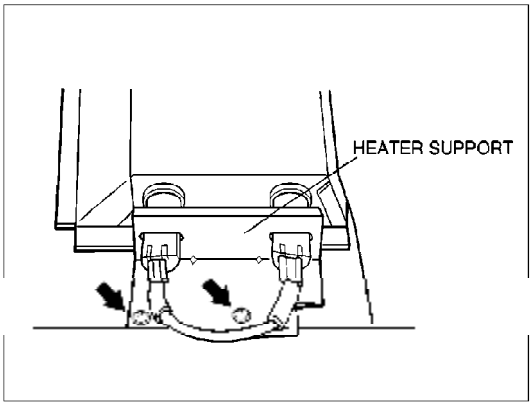
When installing the steam sensor, make sure that the direction of steam sensor is as shown in figure. /

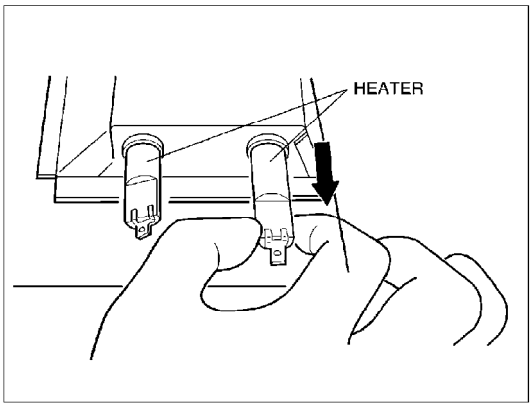




5.8. Quartz heater(For Grill Models)

1. Disconnect lead wires from heater terminals.
2. Remove 2 screws holding heater supports.
3. Remove the heater by pulling it out.





5.9. Inverter power supply

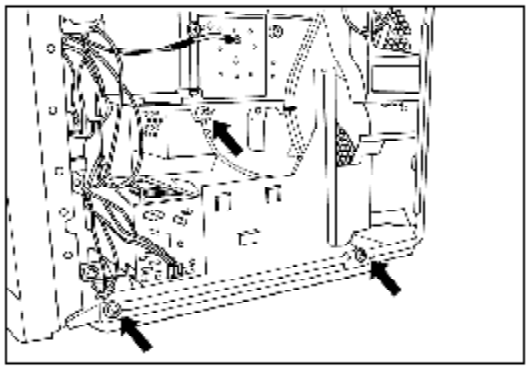
CAUTIONS

1.Always securely tighten the ground screw through the bottom of the chassis (base).

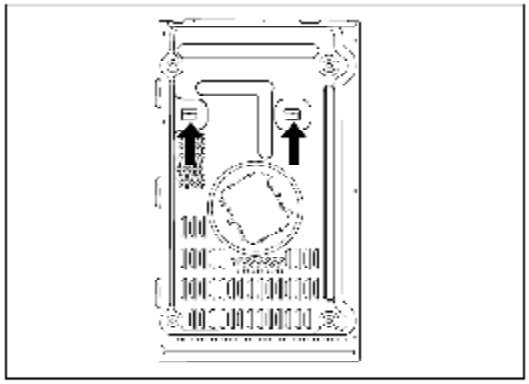
2.Securely connect 3 lead wire connectors.

3.Make sure the heat sink has enough space (gap) from the oven. Take special care not to touch any lead wire to the aluminum heat sink because it is hot.

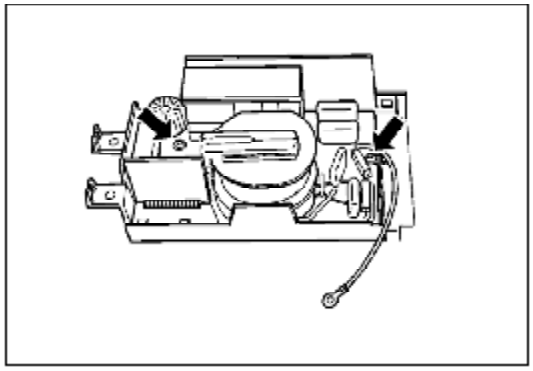
1. Discharge high voltage charge.
2. Remove the the H.V.lead wire from magnetron terminals.
3. Disconnect 2 connectors from CN701 & CN702 on H.V.Inverter(U).
4. Remove 1 screw holding grounding lead wire.
5. Remove 2 screws holding Inverter bracket to the base.

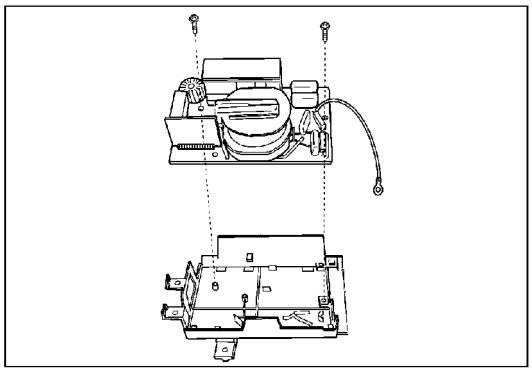


6. Slide 2 locking tabs of Inverter bracket at the bottom of the base in direction of arrows.



7. Remove 2 screws holding H.V.Inverter to Inverter bracket.





6. COMPONENT TEST PROCEDURE

CAUTION [NEW. H.V.]

1. High voltage is present at the high voltage terminal of the High Voltage Inverter (U) including aluminum heat sink during any cook cycle.

2. It is neither necessary nor advisable to attempt measurement of the high voltage.

3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

6.1. Primary latch switch (Secondary latch switch and power relay B) interlocks.

1. Unplug the lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
2. Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
3. Test the continuity of switches at door opened and closed positions with ohm meter (low scale). / Normal continuity readings should be as follows.

	Door Closed	Door Opened
Primary Latch Switch	0 Ω (close)	∞ Ω (open)
Secondary Latch Switch	0 Ω (close)	∞ Ω (open)
Power Relay B	∞ Ω (open)	∞ Ω (open)

6.2. Short switch & monitor

1. Unplug lead wires from Inverter Power Supply (U) primary terminals.
2. Connect test probes of ohm meter to the disconnected leads which were connected to Inverter Power Supply (U).
3. Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter. / Normal continuity readings should be as follows.

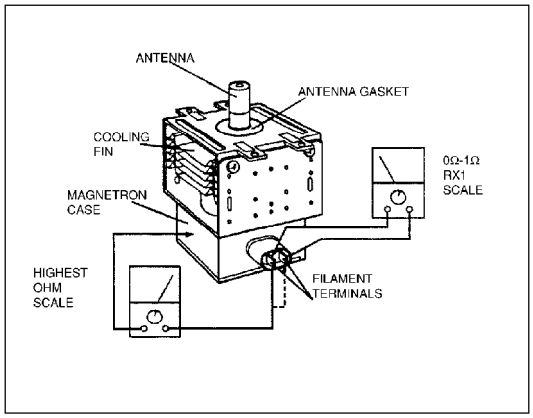
Door Opened	Door Closed
0 Ω	∞ Ω

6.3. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.

1. Isolate magnetron from the circuit by disconnecting the leads.

2. A continuity check across magnetron filament terminals should indicate one ohm or less.
3. A continuity check between each filament terminal and magnetron case should read open.

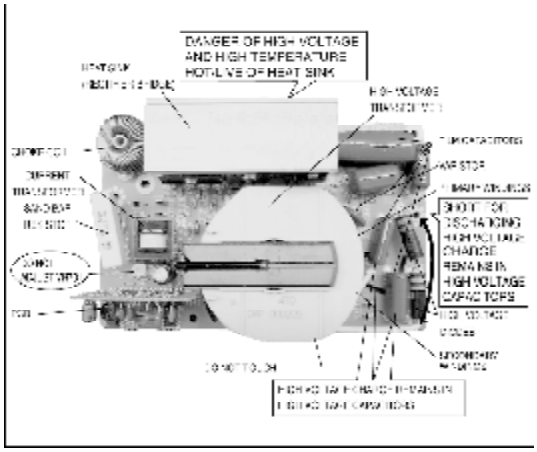


6.4. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

6.5. Inverter power supply (U)

DO NOT try to repair H.V. Inverter Power Supply (U) / Replace complete H.V. Inverter(U) Unit.



DANGER HIGH VOLTAGE

Test if failure codes of H97 or H98 appear by doing the following procedure. It is recommended to use an AC line input current Ampere meter for testing.

Test1

1. Program DPC.
   A. Tap Clock keypad

B. Tap Timer keypad
C. Tap Start keypad
D. Tap Micro Power keypad

2. Place 1 liter of water load into oven cavity.
3. Unplug 2 pin H.V. lead wire connector CN703 from magnetron tube.
4. Program oven at High power for 1 minute and press start.
   A. After approximately 23 seconds, oven stops.
   B. During oven operation, input current is approximately 0.5 to 1A.

	INPUT AMPERE	FAILURE CODE
Unplug CN703	0.5 to 1A	Oven stops in 23 seconds after started.

If both a and b are OK, proceed to test 2.

Test2

Continued from Test 1

1. Unplug 3 pin connector CN701. CN703 remains unplugged.
2. Program oven at High power for 1 minute and press start.
   A. After approximately 3 seconds, oven stops.
   B. During oven operation, input current is approximately 0.4A.

	INPUT AMPERE	FAILURE CODE
Unplug CN701	<0.4A	Oven stops in 3 seconds after started.

If both a and b check OK, the Inverter Power Supply (U) can be determined to be OK.

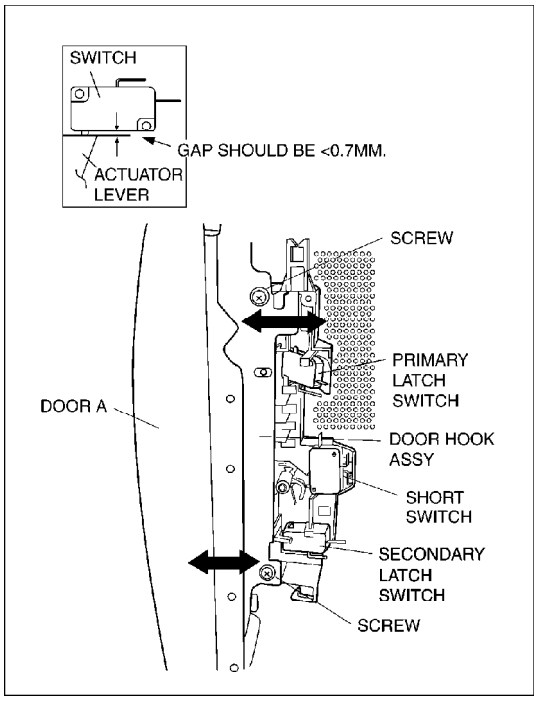
7. MEASUREMENTS AND ADJUSTMENTS

7.1. Adjustment of primary latch switch, secondary latch switch and short switch.

1. Mount the Primary latch switch, the Secondary latch switch and the Short switch to the door hook assembly as shown in ILL.
   NOTE:

No specific individual adjustment during installation of the Primary latch switch, Secondary latch switch or short switch to the door hook are required.

2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration, so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
3. Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures on .



7.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However,due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

***1 liter beaker *Glass thermometer / *Wrist watch or stopwatch**

NOTE:

Check the line voltage under load.Low voltage will lower the magnetron output. Take the temperature readings and heating time

as accurately as possible.

1. Fill the beaker with exactly one liter of tap water.Stir the water using the thermometer and record the water's temperature. (recorded as T1).
2. Place the beaker on the center of glass tray. / Set the oven for High power and heat it for exactly one minute.
3. Stir the water again and read the temperature of the water. (recorded as T2).
4. The normal temperature rise at High power level for each model, is as shown in table.

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1000W(IEC705-88)	Min.8.6°C
1100W(IEC705-88)	Min.9.4°C

8. PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm^2. After repairing or replacing any radiation safety device, keep a written record for future reference, the leakage reading must be recorded on the service repair ticket while in the customer's home.

8.1. Equipment

- Electromagnatic radiation monitor
- Glass thermometer 212 °F or 100 °C
- 600cc glass beaker

8.2. Procedure for measuring radiation leakage

Note before measuring.

- Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
- To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
- Leakage with the outer panel removed ..... less than 5mW/cm$_2$.
- Leakage for a fully assembled oven with door normally closed .....

less than 2mW/cm ^{2}.

- Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ..... less than 2mW/cm ^{2}.

1. **Pour 275 ± 15cc (9ozs ± 1/2oz) of 20°C ± 5°C (68 ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.**
2. **Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.**
3. **When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.**
4. **Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.**

8.2.1. Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING
Avoid contacting any high voltage parts.

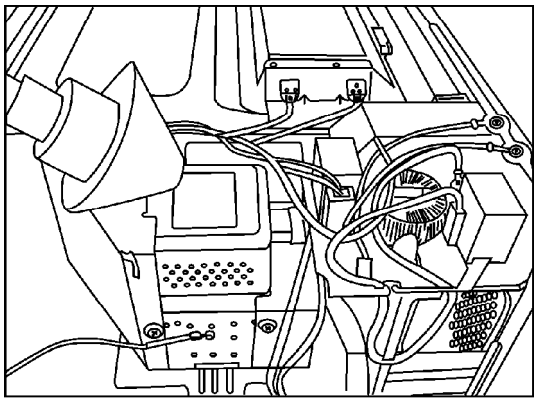
8.2.2. Measurements with a fully assembled oven.

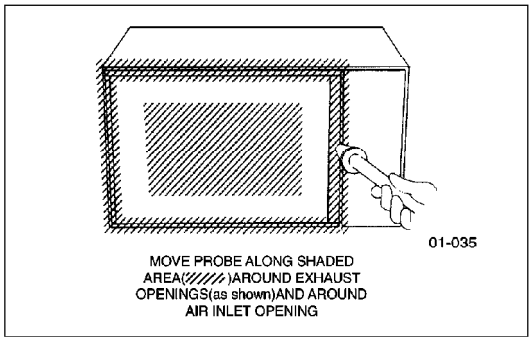
After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

8.3. Record keeping and notification after measurement

1. **After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.**
   A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.

8.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.





9. TROUBLESHOOTING GUIDE

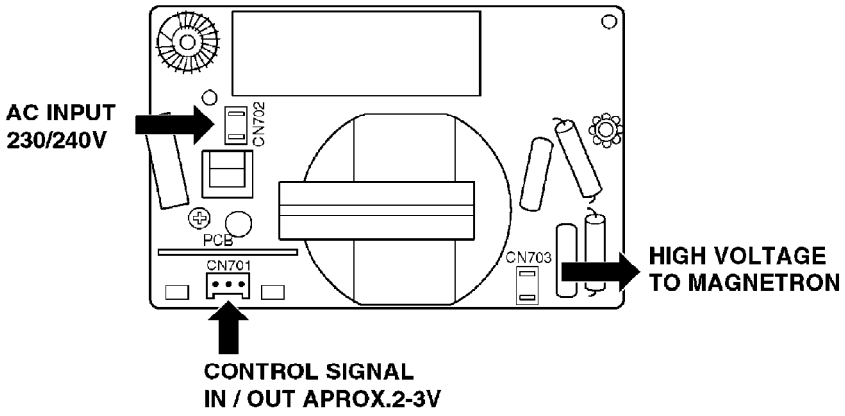
DANGER HIGH VOLTAGES

1. **DO NOT RE-ADJUST PRESET CONTROL on the H.V.Inverter (U). It is very dangerous to repair o without sufficient test equipment because this circuit handles very large current and high volta Operating a misaligned inverter circuit is dangerous.**
2. **Ensure proper grounding before checking for trouble.**
3. **Be careful of the high voltage circuitry, taking necessary precautions when troubleshooting.**
4. **Discharge high voltage remains in the H.V.Inverter (U).**
5. **When checking the continuity of the switches or the H.V.Inverter, disconnect one lead wire from parts and then check continuity with the AC plug removed. To do otherwise may result in a fals or damage to your meter. When disconnecting a plastic connector from a terminal, you must ho plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be op connector cannot be removed.**
6. **Do not touch any parts of the circuitry on the digital programmer circuit, since static electric dis may damage this control panel. Always touch yourself to ground while working on this panel to any static charge in your body.**
7. **230-240V AC is present on the digital programmer circuit (Terminals of power relay's and prima of Digital Programmer Circuit). When troubleshooting, be cautious of possible electrical shock**

Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the oven's malfunction.

9.1. (Trouble) Oven stops operation during cooking

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven stops in 3 seconds after pressing start pad	No 230-240V AC is supplied to H.V.Inverter (U) CN702 terminals	1. Latch Switch 2. Power relay RY-1 3. Loose lead wire conne CN701, CN702
	Oven stops in 23 seconds after pressing start pad	H.V.Inverter (U) operates by the control signals from DPC but magnetron is not oscillating	1. Magnetron 2. Loose lead wire conne CN703
	Oven stops in 10 seconds after pressing start pad (Auto sensor cooking)	Steam sensor circuit does not function	1. Steam sensor 2. DPC 3. Loose wiring connecto
2.	No display and no operation at all. Fuse is blown.	Most probably loose connection of connectors or door latch mechanism is not adjusted properly	1. Allign door, Door Latcl 2. Loose wiring connecto

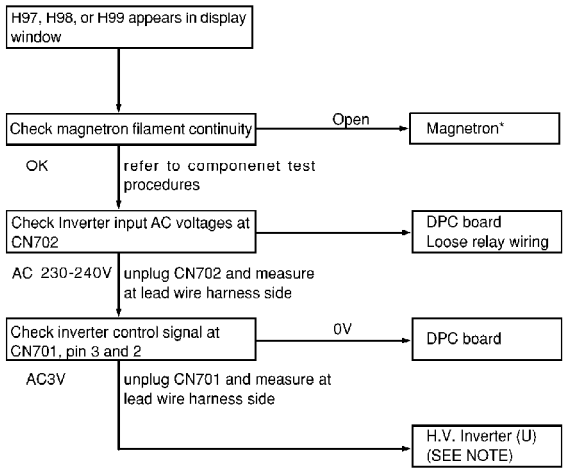


	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness Open thermal cutout 2. Open low voltage transformer Defective DPC 3. 4.	Check fan motor if thern is defective.
2.	No display and no operation at all. / Fuse is blown.	1. Shorted lead wire harness Defective primary latch switch 2. (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter Power Supply (U)	Check adjustment of pri secondary latch switch a switch including door.
		NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay B (RY-1)'s contacts (between and if it has continuity, replace power relay B (RY-1) also.	
3.	Oven does not accept key input(Program)	1. Key input is not in sequence Open or loose connection of 2. membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC	Refer to operation proce Refer to DPC troublesho
4.	Fan motor turns on when oven is plugged in with door closed.	1. Misadjustment or loose wiring of secondary latch switch 2. Defective secondary latch switch	Adjust door and latch sv
5.	Timer starts count down but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches Open or loose connection of high 2. voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to have lower output and/or have intermittent. 3. Defective high voltage component H.V. Inverter Power Supply (u) Magnetron 4. Open or loose wiring of power relay B (RY-1) 5. Defective primary latch switch 6. Defective DPC or power relay B (RY-1)	Adjust door and latch sv Check high voltage com according to component procedure and replace if defective. Refer to DPC troublesho

	SYMPTOM	CAUSE	CORRECTIONS
6.	Oven can program but timer does not start countdown.	1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch	
7.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit.(Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
8.	Fan motor turns on and turntable rotates when door is opened.	1. Shorted primary latch switch	
9.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check tighten screws or escutcheon base bracke board.
10.	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
11.	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
12.	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cutout	Adjust door and latch sv
13.	Oven returns to plugged in mode after 10 seconds elapses on the Auto sensor cooking mode.	1. Open or loose wiring of sensor terminal from DPC 2. Open steam sensor 3. Defective DPC	

9.2. Troubleshooting of inverter circuit (U) and magnetron [NEW H.V.]

This oven is programmed with a self diagnostics failure code system which will help for troubleshooting. H97, H98, and H99 are the provided failure codes to indicate magnetron and inverter circuit problem areas. This section explains failure codes of H97, H98, and H99. First, you must program the DPC by pressing [Clock] , [Timer] , [Start] , [Micro Power] . Program unit for operation. H97, H98, H99 appears in display window a short time after start key is pressed and there is no microwave oscillation.


H97, H98, or H99 appears in display window
Check magnetron filament continuity
Open
Magnetron*
OK
refer to componenet test procedures
Check Inverter input AC voltages at CN702
DPC board
Loose relay wiring
AC 230-240V
unplug CN702 and measure at lead wire harness side
Check inverter control signal at CN701, pin 3 and 2
0V
DPC board
AC3V
unplug CN701 and measure at lead wire harness side
H.V. Inverter (U) (SEE NOTE)

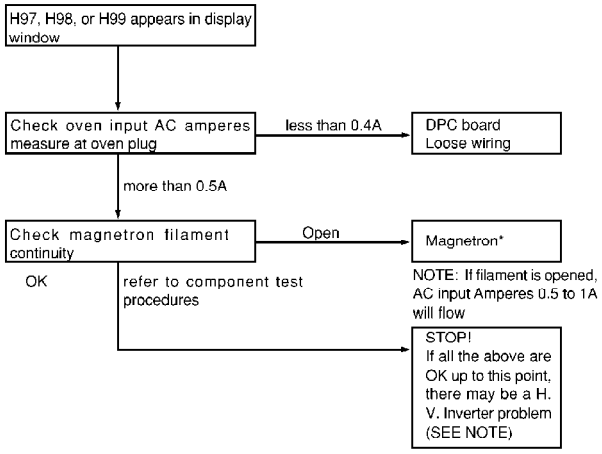
NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET CONTROL on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

NOTE: After check, unplug unit to reset to normal operation mode.

Alternate way to troubleshoot oven with AC Ampere meter used

H97, H98, H99 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampere meter used for troubleshooting


H97, H98, or H99 appears in display window
Check oven input AC amperes measure at oven plug
less than 0.4A
DPC board
Loose wiring
more than 0.5A
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
NOTE: If filament is opened, AC input Amperes 0.5 to 1A will flow
STOP!
If all the above are OK up to this point, there may be a H. V. Inverter problem (SEE NOTE)

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT

RE-ADJUST PRESET CONTROL on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

NOTE: After check, unplug unit to reset to normal operation mode.

9.3. Digital programmer circuit troubleshooting guide

SYMPTOM	STEP	CHECK	RESULT	CA CORR
No display when oven is first plugged in. Oven is dead.	1	Fuse pattern of DPC	Normal	STEP
			Open (NOTE)	Shorte of ZNR Oven etc.Re
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Ste
	3	Emitter of Q10	Abnormal	ZD10,
			Normal = 5V	Displa

NOTE

Procedure of fuse pattern repairing is as follows:

1. When the fuse pattern (PF2) opens.

(1) Remove the jumper wire (PF1).

(2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2 patterns are open, replace DPC.

2. When the fuse pattern (PF4) opens.

(1) Remove the jumper wire (PF3).

(2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF3" and "PF4 patterns are open, replace DPC.

NOTE:* At the time of these repairs, make visual inspection of the varistor for burning damage a examine the transformer with tester for the presence of layer short-circuit (check primary coil res If any abnormal condition is detected, replace the defective parts.

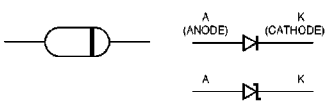
No key input	1	Membrane switch continuity	Abnormal	Memb switch
			Normal	IC-1
No beep sound (For NN-S453WF/S553WF)	1	IC-1 pin 29 voltage	Abnormal	IC-1
			Normal	BZ, Q2
No beep sound (For NN-K593MF/K573MF/K573WF/ K543WF)	1	IC-1 pin 8 voltage	Abnormal	IC-1
			Normal	BZ, Q2
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped (For NN-S453WF/S553WF)	1	IC-1 pin 9 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Ste
	2	Short circuit between collector and Emitter of Q223.	Still does not turn on	RY-2
			RY-2 turns on	Q223

SYMPTOM	STEP	CHECK	RESULT	CA CORR
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped (For NN-K593MF/K573MF/K573WF/ K543WF)	1	IC-1 pin 41 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Ste
	2	Short circuit between collector and Emitter of Q223.	Still does not turn on	RY-2
			RY-2 turns on	Q223
No microwave oscillation at any power setting (For NN-S453WF/S553WF)	1	IC-1 pin 7 and pin 34 voltages while operation at high power	Abnormal	IC-1
			Normal=18V	→ Ste
	2	Q220 transistor	Abnormal	Q220
			Normal	RY-1
No microwave oscillation at any power setting (For NN-K593MF/K573MF/K573WF/ K543WF)	1	IC-1 pin 39 and pin 45 voltages while operation at high power	Abnormal	IC-1
			Normal=18V	→ Ste
	2	Q220 transistor	Abnormal	Q220
			Normal	RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPL
			Abnormal	IC-1
Missing or lighting of incorrect segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPL
H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. [NEW H.V.]	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Lato 2. DPC Relay
			AC line voltage of 230-240V	→ Ste
	2	Unplug CN701(3 pin) connector and measure pin 3 voltage	0V	DPC
			Approx. AC 3V	Magne

CONTINUED FOR SENSOR MODELS				
Auto sensor cooking does not operate normally. (Steam Sensor cooking does not detect steam from foods.)	1	Steam sensor terminal voltage by using high impedance tester (20k Ω / V),while breathing on metal surface of sensor	Abnormal = 0V	Steam senso
			Normal>10-30mV	IC-1

9.4. How to check the semiconductors using an OHM meter

Diode



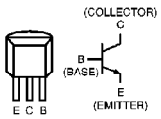
	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

2SC·····

2SD·····

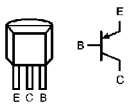


	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

PNP Transistor

2SA·····

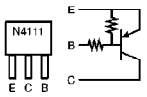
2SB·····



	FORWARD	REVERSE
B-E	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

Digital Transistor

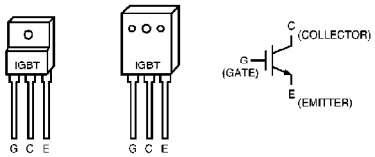
PNP Transistor



	FORWARD	REVERSE
E-B	10kΩ ~ 30kΩ	10kΩ ~ 30kΩ
C-B	50kΩ ~ 90kΩ	∞
C-E	40kΩ ~ 80kΩ	∞

IGBT

(INSULATED GATE BIPOLAR TRANSISTOR)



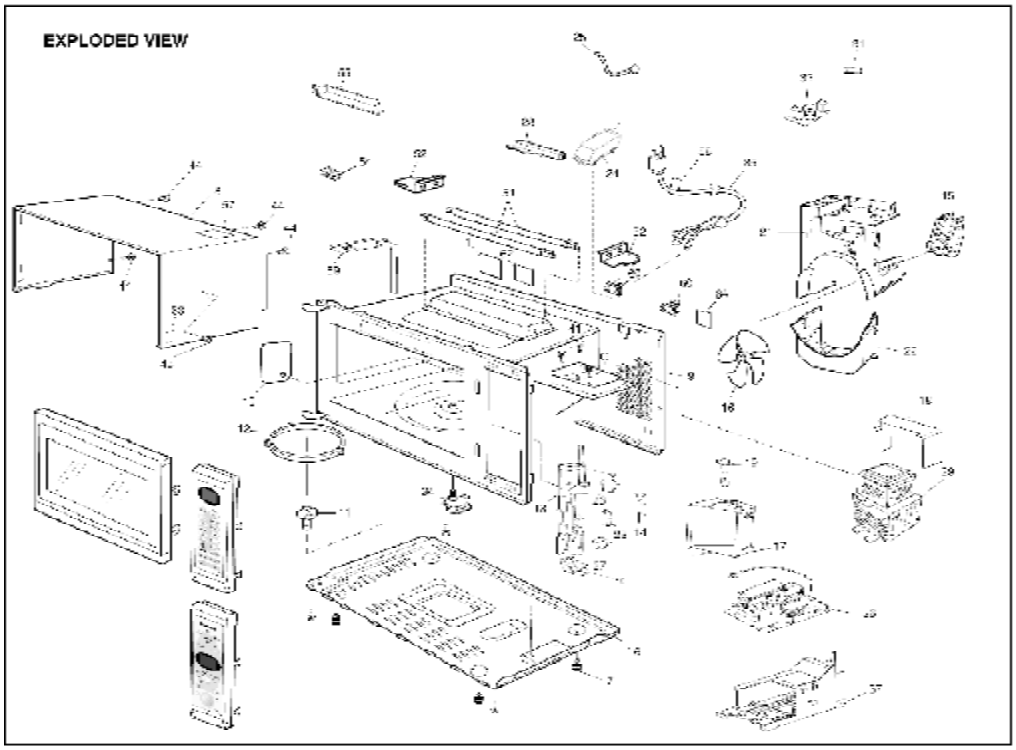
	FORWARD	REVERSE
E-C	SMALL	∞
E-G	∞	∞
C-G	∞	∞

INVERTER BOARD PARTS LIST (F606Y4V00XN)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
C701		AECQ2G104JC1	CAPACITOR	1	0.1 μF , 500VDC
C702		ECQE2405T847	CAPACITOR	1	4 μF , 250VDC
C703		AECQ2H454JC3	CAPACITOR	1	0.45 μF , 500VDC
C704 , C705		ECWH30822JUA	CAPACITOR	2	8200PF, 3000VDC
CN701		AEEMXH00703G	CONNECTOR	1	
D701 , D702	⚠	A62024V00GP	DIODE SI	2	0.3A
D703		AESSRCT1H7-E	DIODE SI	1	
D704, D705		AESSRCT1A6-E	DIODE SI	2	
D706		AESS133T-77	DIODE SI	1	MA196, 0.1A
DB701		AESTRS2006M	DIODE SI	1	20A, 600V
		XTWA3+12B	SCREW	2	3*12 (FOR DB701, Q701)
		XTNA3+12B	SCREW	1	3*12 (FOR Q702)
H.S.		F66914V00XN	HEAT SINK	1	
IC702 , IC703		AEICP25011HL	IC	2	
IC801		AN9DB07SB-E1	IC	1	
L701		F50204V00XN	CHOKE COIL	1	
Q701		A691E4V10GP	TRANSISTOR SI	1	
Q702			TRANSISTOR SI	1	
C806			CAPACITOR	1	56PF TRANSISTOR(Q701, Q702) KIT
Q703, Q704		2SC2785TFK	TRANSISTOR SI	2	
Q705		2SA1175TFK	TRANSISTOR SI	1	
R715		AERGRY15J452	RESISTOR	1	4.5K Ω , 15W
VR701		AEVTZ6TLT102	VARIABLE RESISTOR	1	1K Ω , 30%

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
ZD701, ZD703, ZD704, ZD705		AESZMTZJ10B	ZENER DIODE SI	4	
ZD702		AESZMTZJ12C	ZENER DIODE SI	1	
T701		F609A4V00XN	H.V. TRANSFORMER	1	PBF
CT701		F66904V00XN	CURRENT TRANSFORMER	1	

10. EXPLODED VIEW AND PARTS LIST



11. PARTS LIST

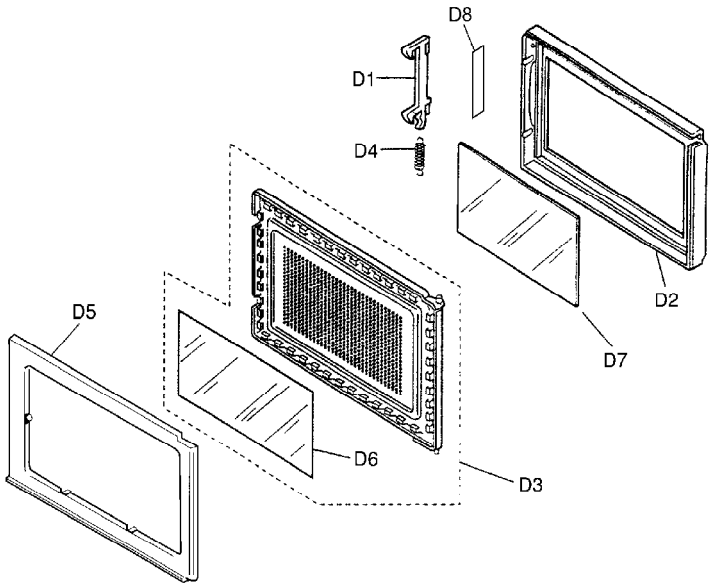
NOTE:

1. **When ordering replacement part(s), please use part number(s) shown in this part list.**
   Do not use description of the part.
2. **Important safety notice:**
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacture's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00068100HN	CAUTION LABEL	1	EXCEPT ZPE
1		F00065E90ZP	CAUTION LABEL	1	ZPE
6		F10015Q00AP	BASE	1	
7		F10084T00AP	RUBBER FOOT	4	
8		F110D5Q00HAP	CABINET BODY	1	S453WF, S553WF
8		F110D5R00SAP	CABINET BODY	1	K593MF, K573MF
8		F110D5R00HAP	CABINET BODY	1	K573WF, K543WF
9	⚠	F200A5Q30BP	OVEN	1	S453WF, S553WF
9	⚠	F200A5R50CP	OVEN	1	K593MF, K573MF/WF
9	⚠	F200A5R20BP	OVEN	1	K543WF
10		F20555Q00BP	COVER	1	
11		F21315G10XN	PULLY SHAFT	1	
12		F290D5Q00AP	ROLLER RING (U)	1	
13	⚠	F30205Q00AP	DOOR HOOK	1	
14		F31365Q00AP	HOOK LEVER A	1	
15		F400A5U00XN	FAN MOTOR	1	
16		F40085G10XN	FAN BLADE	1	
17		F40255Q00AP	AIR GUIDE A	1	
18		F40425Q00AP	AIR GUIDE F	1	
19		F612E5G10XN	INCANDESCENT LAMP (U)	1	(20W/240V)
21		F41445Q00AP	UPPER ORIFICE	1	
22		F42095Q00AP	LOWER ORIFICE	1	
23		F64505Q00AP	SENSOR COVER B	1	K593MF, K573MF/WF
24		F65434W00AP	SENSOR COVER C	1	K593MF, K573MF/WF
25		A607S4T00AP	STEAM SENSOR	1	K593MF, K573MF/WF
26	⚠	J61415G10XN	MICRO SWITCH	1	V-15G-3C25 (PRIMARY LATCH SWITCH)
27	⚠	F61415U30XN	MICRO SWITCH	1	KW3-0D-A(474) (SECONDARY LATCH SWITCH)
28	⚠	F61785U30XN	MICRO SWITCH	1	KW3-0T-A(375) (SHORT SWITCH)
29	⚠	2M261-M32F	MAGNETRON	1	EXCEPT QPQ, STM & ZPE
29	⚠	2M261-M32G	MAGNETRON	1	QPQ, STM, ZPE
31	⚠	A62304210BP	FUSE	1	(10A)
33		J692Y4T00YN	NOISE FILTER (U)	1	EXCEPT QPQ, STM & ZPE
33		J607X4L00BP	NOISE FILTER (U)	1	QPQ, STM, ZPE
34		F63265U30XN	TURNTABLE MOTOR	1	
35	⚠	F900C5G10QP	AC CORD W/PLUG	1	QPQ
35	⚠	F900C5Q00YK	AC CORD W/PLUG	1	HPE, MPQ, YTE, YPQ, KTE, KPQ
35	⚠	F900C5G40SN	AC CORD W/PLUG	1	STM
35	⚠	F900C5Q00TN	AC CORD W/PLUG	1	TPE, PTE, ZPE
35	⚠	F900C5Q00LN	AC CORD W/PLUG	1	LPK
36		F606Y4V00XN	H.V.INVERTER (U)	1	
37		F65855R00BP	INVERTER BRACKET	1	
41		XTWFA4+12T	SCREW	4	FOR MAGNETRON
44		XTWFA4+12D	SCREW	4	FOR CABINET BODY
45		XTCAFA4+ 12AFW	SCREW	1	FOR CABINET BODY SIDE / (S453WF, S553WF, K573WF, K543WF)
45		XTCAFA4+ 12AFS	SCREW	1	FOR CABINET BODY SIDE (K593MF, K573MF)
51		F630G5R20GP	HEATER (AU)	2	K593MF, K573MF/WF
51		F630G6B80XN	HEATER (AU)	2	K543WF (KTE, HPE, TPE, YTE, ZPE, PTE)

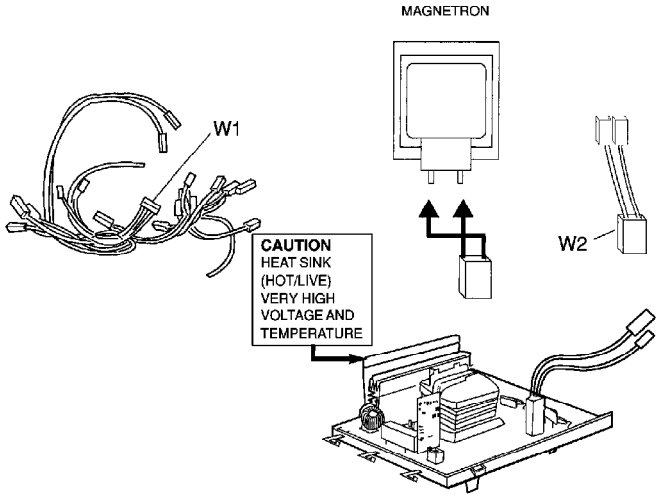
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
51		F630G5R00BP	HEATER (AU)	2	K543WF (MPQ)
52		F64605R00BP	HEATER SUPPORT	2	K593MF, K573MF/WF, K543WF
54		F22589600XN	ADIABATIC MATERIAL	1	K593MF, K573MF/WF, K543WF
55		F40245R00BP	EXHAUST GUIDE A	1	K593MF, K573MF/WF, K543WF
57		F01504Y00XN	NO TOUCHING LABEL	1	K593MF, K573MF/WF, K543WF
58		F02395E20KN	CORD CAUTION LABEL	1	KTE, KPQ, STM, PTE
59		F62865Q00BP	HEAT SHIELD	1	K593MF, K573MF/WF, K543WF
60		F11404J60XN	STOPPER	2	
62		F00065540MN	CAUTION LABEL	1	YPQ
63		F02845Q60YP	NO. LABEL	1	S553WF YPQ
63		F02845R90YP	NO. LABEL	1	K593MF YPQ
63		F02846A10YP	NO. LABEL	1	K573MF YPQ
64		F0005-4S10	EARTH LABEL	1	TPE

12. DOOR ASSEMBLY



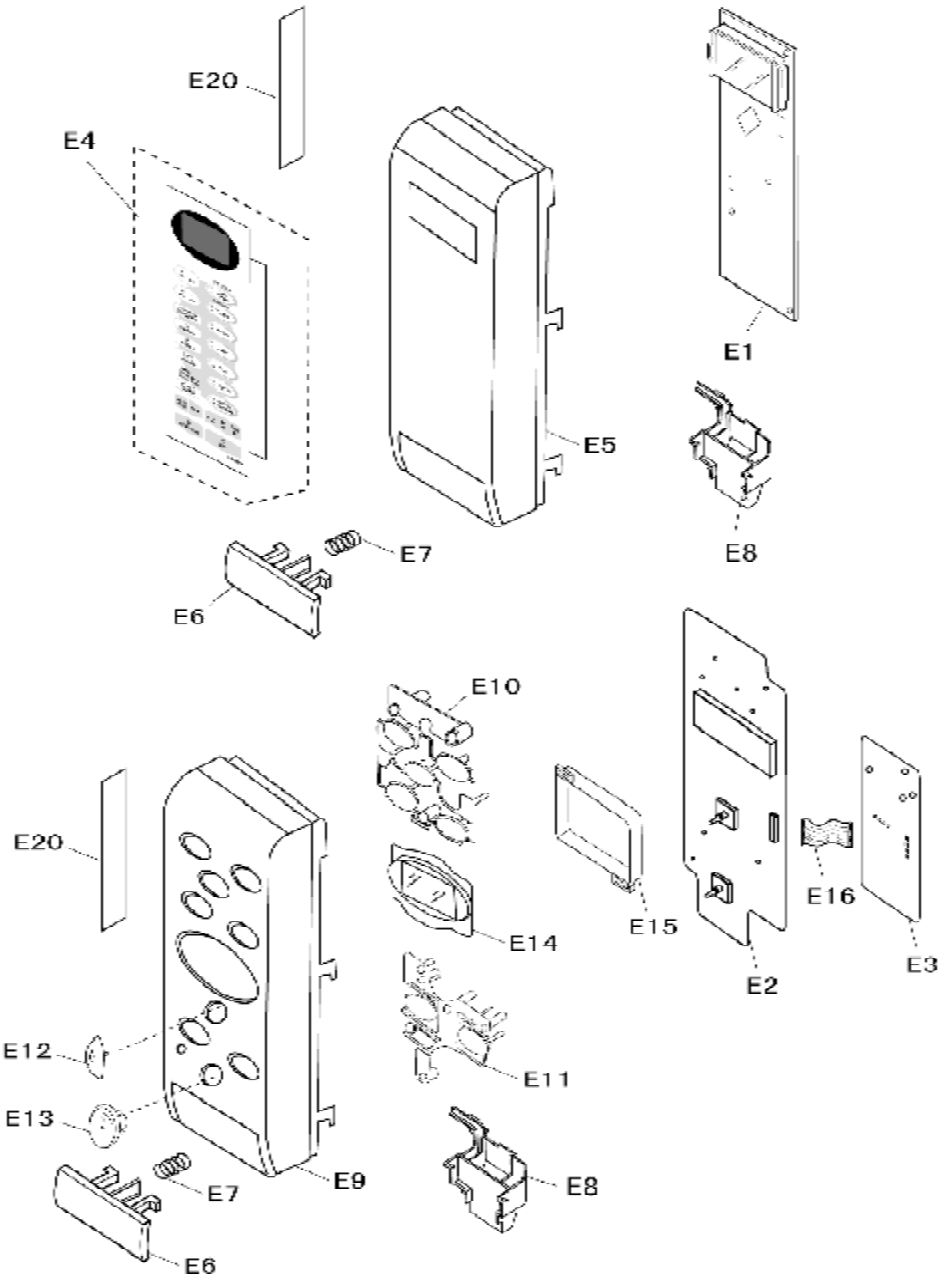
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F30185Q00AP	DOOR KEY A	1	
D2	⚠	F30015Q00HBP	DOOR A	1	S453WF, S553WF(EXCEPT LPK), K573WF, K543WF
D2	⚠	F30015Q00HAP	DOOR A	1	S553WF LPK
D2	⚠	F30015Q00SBP	DOOR A	1	K593MF, K573MF(EXCEPT LPK)
D2	⚠	F30015Q00SAP	DOOR A	1	K573MF LPK
D3	⚠	F302K5Q00AP	DOOR E (U)	1	S453WF, S553WF
D3	⚠	F301P5R00AP	DOOR E (U)	1	K593MF, K573MF/WF, K543WF
D4		F30215G10XN	DOOR KEY SPRING	1	
D5	⚠	F30855Q00AP	DOOR C	1	
D6		F31454T00AP	DOOR SCREEN A	1	S453WF, S553WF
D7		F31465Q00BAP	DOOR SCREEN B	1	S453WF
D7		F31465Q00HP	DOOR SCREEN B	1	S553WF
D7		F31465R90HP	DOOR SCREEN B	1	K593MF, K573MF/WF, K543WF
D8		F01729660JP	CAUTION LABEL B	1	S453WF

13. WIRING MATERIALS



Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
W1		F030A5Q00BP	LEAD WIRE HARNESS	1	S453WF, S553WF ZPE
W1		F030A6D50XP	LEAD WIRE HARNESS	1	S553WF (EXCEPT ZPE)
W1		F030A6D70XP	LEAD WIRE HARNESS	1	K593MF, K573MF/WF(EXCEPT STM & ZPE), K543WF(EXCEPT ZPE)
W1		F030A5R30ZP	LEAD WIRE HARNESS	1	K573WF STM, K573MF ZPE, K543WF ZPE
W2		F030E5Q00AP	H.V.LEAD WIRE	1	

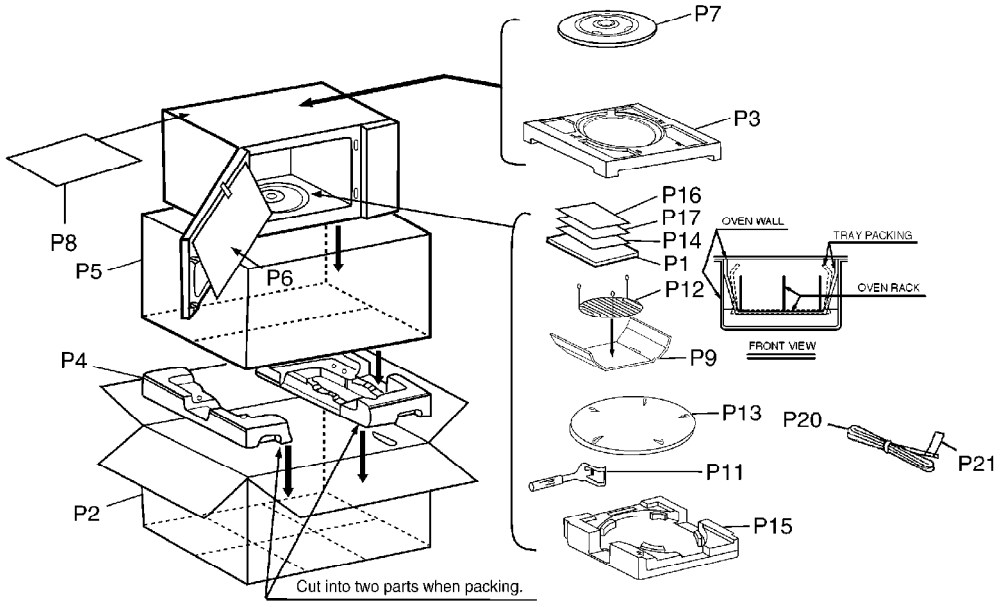
14. ESCUTCHEON BASE ASSEMBLY


E20
E4
E5
E1
E8
E7
E6
E10
E20
E15
E16
E3
E14
E2
E12
E11
E13
E9
E7
E8
E6

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E1		F603L5Q40QP	D.P.CIRCUIT(AU)	1	S453WF QPQ
E1		F603L5Q60HP	D.P.CIRCUIT(AU)	1	S553WF HPE, S553WF TPE
E1		F603L5Q60MP	D.P.CIRCUIT(AU)	1	S553WF MPQ, S553WF YPQ
E1		F603L5Q60YT	D.P.CIRCUIT(AU)	1	S553WF YTE
E1		F603L5Q60LP	D.P.CIRCUIT(AU)	1	S553WF LPK
E1		F603L5Q60ZP	D.P.CIRCUIT(AU)	1	S553WF ZPE
E1		F603L6A10HP	D.P.CIRCUIT(AU)	1	K573MF HPE, K573MF TPE
E1		F603L6A10MP	D.P.CIRCUIT(AU)	1	K573MF MPQ
E1		F603L6A10YT	D.P.CIRCUIT(AU)	1	K573MF YTE
E1		F603L6A10LP	D.P.CIRCUIT(AU)	1	K573MF LPK
E1		F603L6A10YP	D.P.CIRCUIT(AU)	1	K573MF YPQ
E1		F603L6A10KT	D.P.CIRCUIT(AU)	1	K573WF KTE, K573WF PTE
E1		F603L6A10KP	D.P.CIRCUIT(AU)	1	K573WF KPQ
E1		F603L6A10ST	D.P.CIRCUIT(AU)	1	K573WF STM
E1		F603L6A10ZP	D.P.CIRCUIT(AU)	1	K573MF ZPE
E1		F603L5R30KT	D.P.CIRCUIT(AU)	1	K543WF KTE, K543WF PTE
E1		F603L5R30HP	D.P.CIRCUIT(AU)	1	K543WF HPE, K543WF TPE
E1		F603L5R30MP	D.P.CIRCUIT(AU)	1	K543WF MPQ
E1		F603L5R30YT	D.P.CIRCUIT(AU)	1	K543WF YTE
E1		F603L5R30ZP	D.P.CIRCUIT(AU)	1	K543WF ZPE
E2		F608E5R90HP	D.P.CIRCUIT(ABU)	1	K593MF HPE
E2		F608E5R90YP	D.P.CIRCUIT(ABU)	1	K593MF YPQ
E2		F608E5R90YT	D.P.CIRCUIT(ABU)	1	K593MF YTE
E3		F603Y5R90HP	D.P.CIRCUIT(DU)	1	K593MF
E4		F630Y5Q40HQP	MEMBRANE SWITCH(U)	1	S453WF
E4		F630Y5Q60HHP	MEMBRANE SWITCH(U)	1	S553WF (HPE, TPE, YTE, YPQ, MPQ, LPK)
E4		F630Y5Q60HZP	MEMBRANE SWITCH(U)	1	S553WF (ZPE)
E4		F630Y6A10SHP	MEMBRANE SWITCH(U)	1	K573MF (HPE, TPE, MPQ, YTE, LPK, YPQ)
E4		F630Y6A10HKT	MEMBRANE SWITCH(U)	1	K573WF (KTE, KPQ, STM, PTE)
E4		F630Y6A10SZP	MEMBRANE SWITCH(U)	1	K573MF (ZPE)
E4		F630Y5R30HKT	MEMBRANE SWITCH(U)	1	K543WF (KTE, PTE)
E4		F630Y5R30HHP	MEMBRANE SWITCH(U)	1	K543WF (HPE, TPE, MPQ, YTE)
E4		F630Y5R30HZP	MEMBRANE SWITCH(U)	1	K543WF (ZPE)
E5		F80345Q00HBP	ESCUTCHEON BASE	1	S453WF, S553WF, K573WF, K543WF
E5		F80345Q00SBP	ESCUTCHEON BASE	1	K573MF
E6		F80725Q00HAP	DOOR OPENING BUTTON	1	S453WF, S553WF, K573WF, K543WF
E6		F80725Q00SAP	DOOR OPENING BUTTON	1	K593MF, K573MF
E7		F80375K00AP	COOK BUTTON SPRING	1	
E8		F82565Q00AP	DOOR OPENING LEVEL	1	
E9		F80345R90SHP	ESCUTCHEON BASE	1	K593MF
E10		F80245R90SHP	BUTTON A	1	K593MF
E11		F83875R90SHP	BUTTON B	1	K593MF
E12		F80205Q50SEP	KNOB A	1	K593MF
E13		F83925R80SEP	KNOB B	1	K593MF
E14		F81895Q50HEP	DISPLAY WINDOW	1	K593MF
E15		F80165Q50EP	DISPLAY FRAME	1	K593MF
E16		F66165Q00EP	FLAT CABLE	1	K593MF
E20		F00075Q40HQP	NAME PLATE	1	S453WF
E20		F00075Q60HP	NAME PLATE	1	S553WF HPE
E20		F00075Q60TP	NAME PLATE	1	S553WF TPE
E20		F00075Q60YT	NAME PLATE	1	S553WF YTE

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
E20		F00075Q60YP	NAME PLATE	1	S553WF YPQ
E20		F00075Q60MP	NAME PLATE	1	S553WF MPQ
E20		F00075Q60LP	NAME PLATE	1	S553WF LPK
E20		F00075Q60ZP	NAME PLATE	1	S553WF ZPE
E20		F00075R90HP	NAME PLATE	1	K593MF HPE
E20		F00075R90YP	NAME PLATE	1	K593MF YPQ
E20		F00075R90YT	NAME PLATE	1	K593MF YTE
E20		F00076A10HP	NAME PLATE	1	K573MF HPE
E20		F00076A10TP	NAME PLATE	1	K573MF TPE
E20		F00076A10MP	NAME PLATE	1	K573MF MPQ
E20		F00076A10YT	NAME PLATE	1	K573MF YTE
E20		F00076A10LP	NAME PLATE	1	K573MF LPK
E20		F00076A10YP	NAME PLATE	1	K573MF YPQ
E20		F00076A10KT	NAME PLATE	1	K573WF KTE
E20		F00076A10KP	NAME PLATE	1	K573WF KPQ
E20		F00076A10ST	NAME PLATE	1	K573WF STM
E20		F00076A10ZP	NAME PLATE	1	K573MF ZPE
E20		F00076A10PT	NAME PLATE	1	K573WF PTE
E20		F00075R30HP	NAME PLATE	1	K543WF HPE
E20		F00075R30KT	NAME PLATE	1	K543WF KTE
E20		F00075R30TP	NAME PLATE	1	K543WF TPE
E20		F00075R30MP	NAME PLATE	1	K543WF MPQ
E20		F00075R30YT	NAME PLATE	1	K543WF YTE
E20		F00075R30ZP	NAME PLATE	1	K543WF ZTE
E20		F00075R30PT	NAME PLATE	1	K543WF PTE

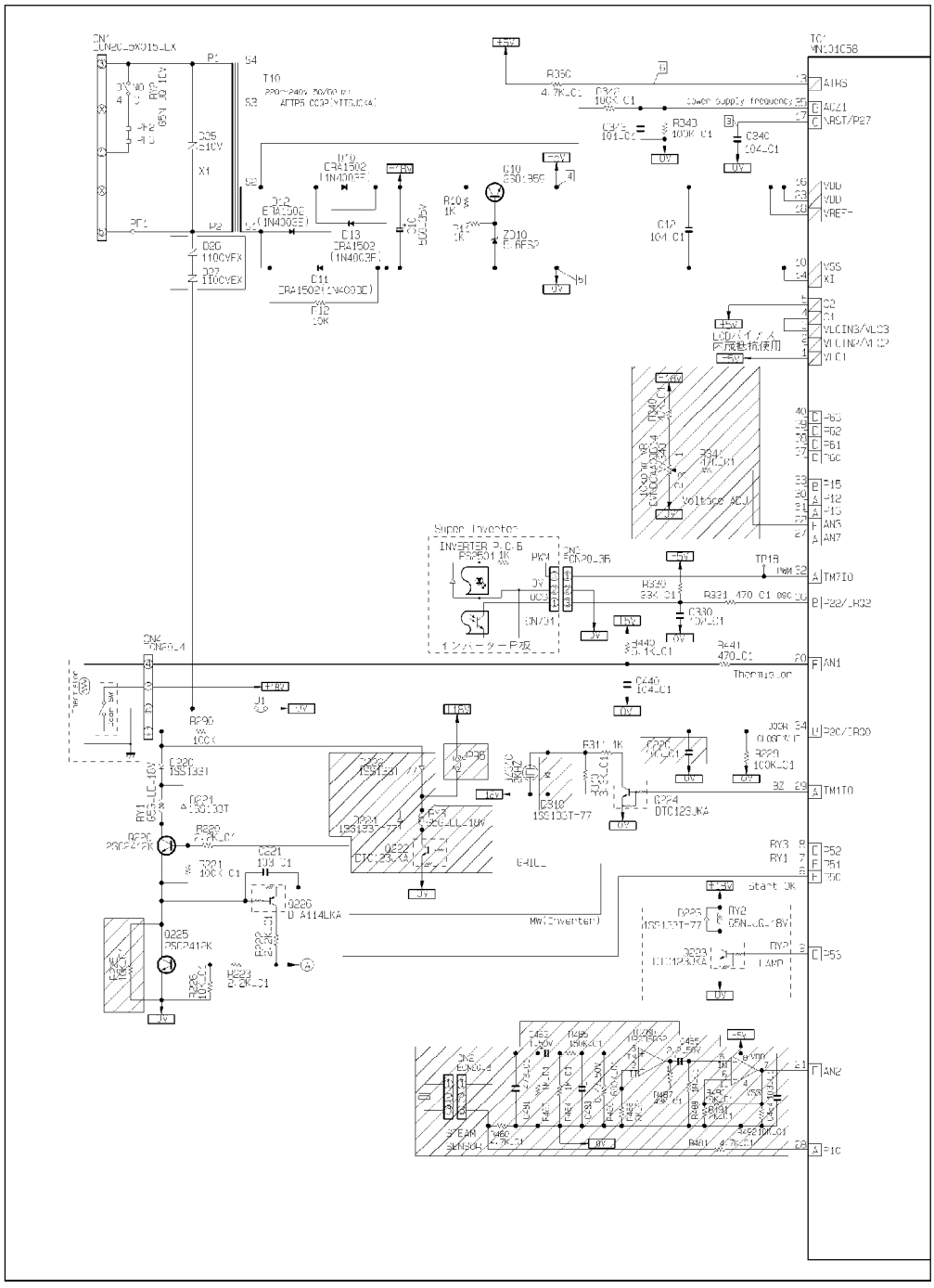
15. PACKING AND ACCESORIES

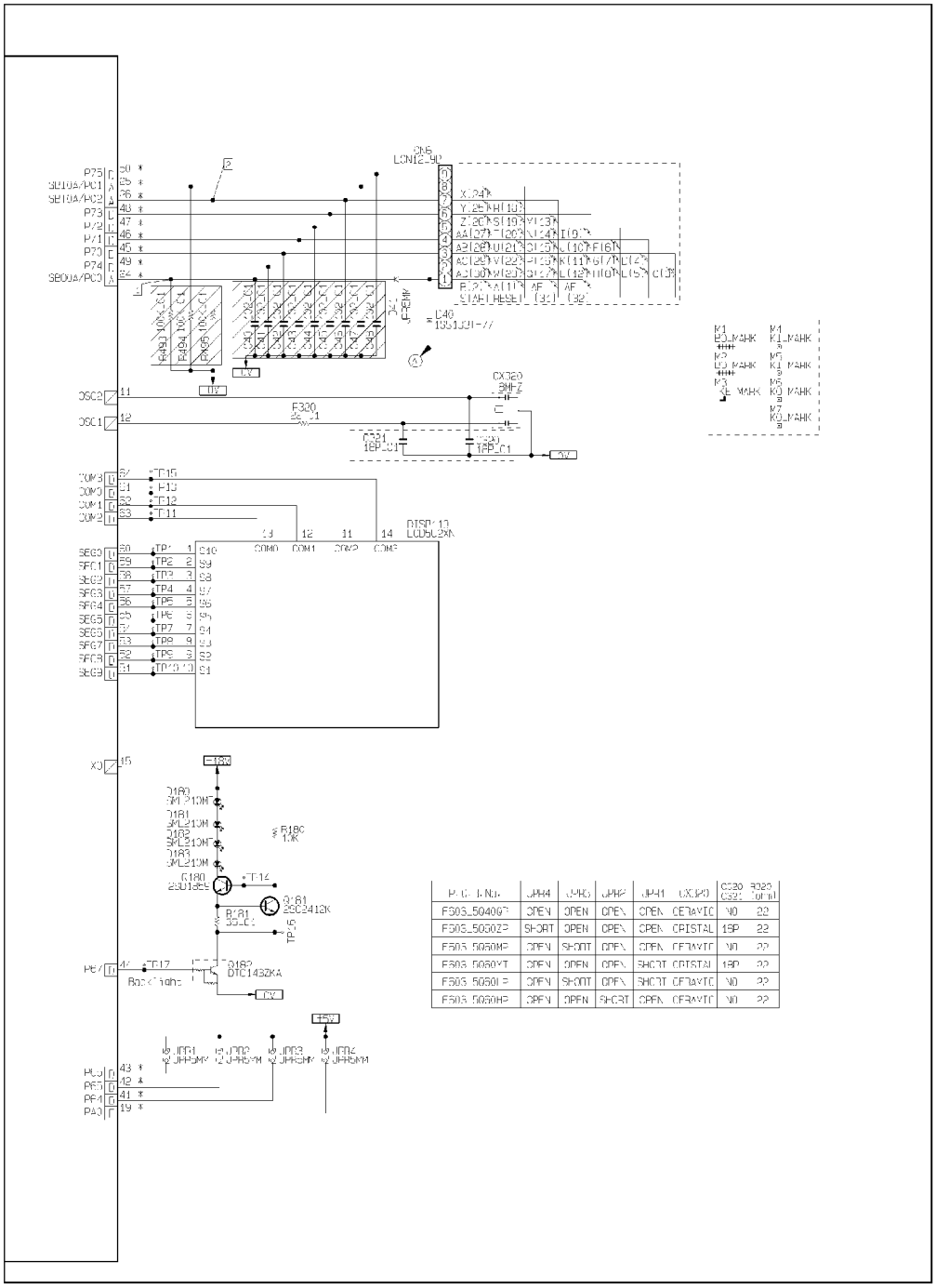


Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
P1		F00035Q40QP	INSTRUCTION MANUAL	1	S453WF
P1		F00035Q60HP	INSTRUCTION MANUAL	1	S553WF (HPE, TPE, YTE, YPQ, MPQ, LPK)
P1		F00035Q60ZP	INSTRUCTION MANUAL	1	S553WF (ZPE)
P1		F00035R90HP	INSTRUCTION MANUAL	1	K593MF
P1		F00036A10HP	INSTRUCTION MANUAL	1	K573MF (HPE, TPE, MPQ, YTE, LPK, YPQ)
P1		F00036A10KP	INSTRUCTION MANUAL	1	K573WF (KTE, KPQ, STM, PTE)
P1		F00036A10ZP	INSTRUCTION MANUAL	1	K573MF (ZPE)
P1		F00035R30KP	INSTRUCTION MANUAL	1	K543WF (KTE, PTE)
P1		F00035R30HP	INSTRUCTION MANUAL	1	K543WF (HPE, TPE, MPQ, YTE)
P1		F00035R30ZP	INSTRUCTION MANUAL	1	K543WF (ZPE)
P2		F01025Q40HQP	PACKING CASE, PAPER	1	S453WF
P2		F01025Q60HHP	PACKING CASE, PAPER	1	S553WF (HPE, TPE, YTE, YPQ, MPQ, LPK)
P2		F01025Q60HZP	PACKING CASE, PAPER	1	S553WF (ZPE)
P2		F01025R90SHP	PACKING CASE, PAPER	1	K593MF
P2		F01026A10SHP	PACKING CASE, PAPER	1	K573MF (HPE, TPE, MPQ, YTE, LPK, YPQ)
P2		F01026A10HKT	PACKING CASE, PAPER	1	K573WF (KTE, KPQ, STM, PTE)
P2		F01026A10SZP	PACKING CASE, PAPER	1	K573MF (ZPE)
P2		F01025R30HKT	PACKING CASE, PAPER	1	K543WF (KTE, PTE)
P2		F01025R30HHP	PACKING CASE, PAPER	1	K543WF (HPE, TPE, MPQ, YTE)
P2		F01025R30HZP	PACKING CASE, PAPER	1	K543WF (ZPE)
P3		F01045Q00AP	UPPER FILLER	1	
P4		F01055Q00AP	LOWER FILLER	1	
P5		F01068100XN	P.E.BAG	1	
P6		F01078100XN	DOOR SHEET	1	
P7		F06015Q00AP	COOKING TRAY	1	
P8		F01924T00AP	SHEET	1	K593MF, K573MF
P9		F01085R00BP	RACK PACKING	1	K593MF
P9		F01085R00AP	RACK PACKING	1	K573MF/WF, K543WF
P11		F10855R00AP	PIZZA PAN HANDLE	1	K593MF
P12		F060V5U00XN	OVEN RACK	1	K593MF, K573MF/WF, K543WF
P13		F46065R00AP	PIZZA PAN	1	K593MF
P14		F000B5Q60HP	COOKING GUIDE	1	S553WF (HPE, TPE, YTE, YPQ, MPQ, LPK) K593MF, K573MF (HPE, TPE, MPQ, YTE, LPK, YPQ) K543WF (HPE, TPE, MPQ, YTE)
P14		F000B5Q60ZP	COOKING GUIDE	1	S553WF (ZPE)
P14		F000B5820KP	COOKING GUIDE	1	K573WF (KTE, KPQ, STM, PTE), K543WF (KTE, PTE)
P14		F000B5Q60ZP	COOKING GUIDE	1	K573MF (ZPE), K543WF (ZPE)
P15		F01135R00AP	PIZZA PAN FOAM	1	K593MF
P16		F04455Q60TP	MENU LABEL	1	S553WF TPE
P16		F04455Q60YP	MENU LABEL	1	S553WF MPQ, S553WF YPQ
P16		F04456A10TP	MENU LABEL	1	K573MF TPE
P16		F04456A10MP	MENU LABEL	1	K573MF MPQ, K573MF YPQ
P16		F04455R30TP	MENU LABEL	1	K543WF TPE
P16		F04455R30MP	MENU LABEL	1	K543WF MPQ
P17		F00065G40AP	CAUTION LABEL	1	S453WF
P17		F00065E90ZP	CAUTION LABEL	1	S553WF ZPE
P20		F91644000XN	EARTH LEAD	1	TPE
P21		F00324040XN	EARTH CAUTION LABEL	1	TPE

16. DIGITAL PROGRAMMER CIRCUIT (NN-S453WF/ S553WF)

SCHEMATIC DIAGRAM

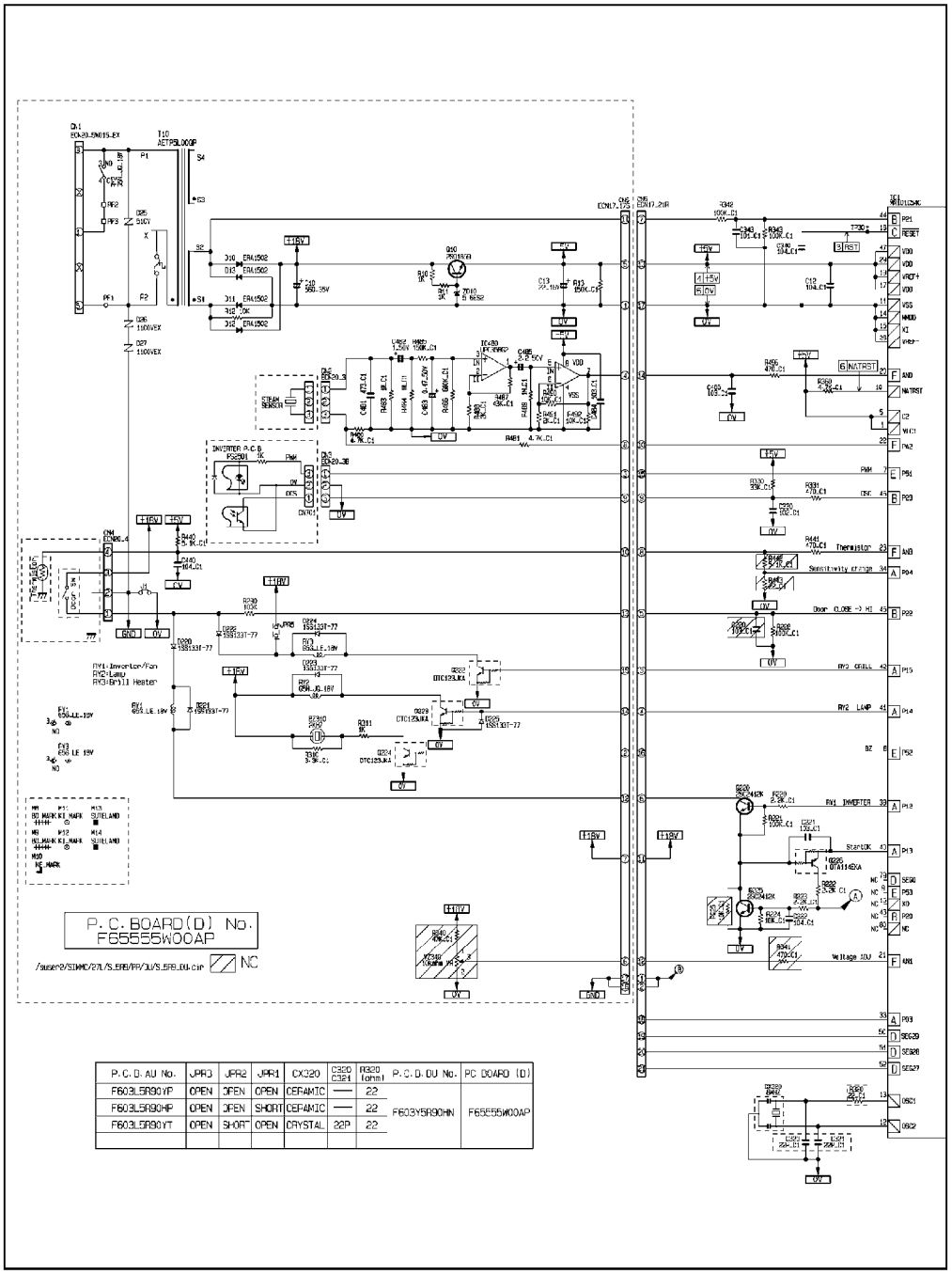




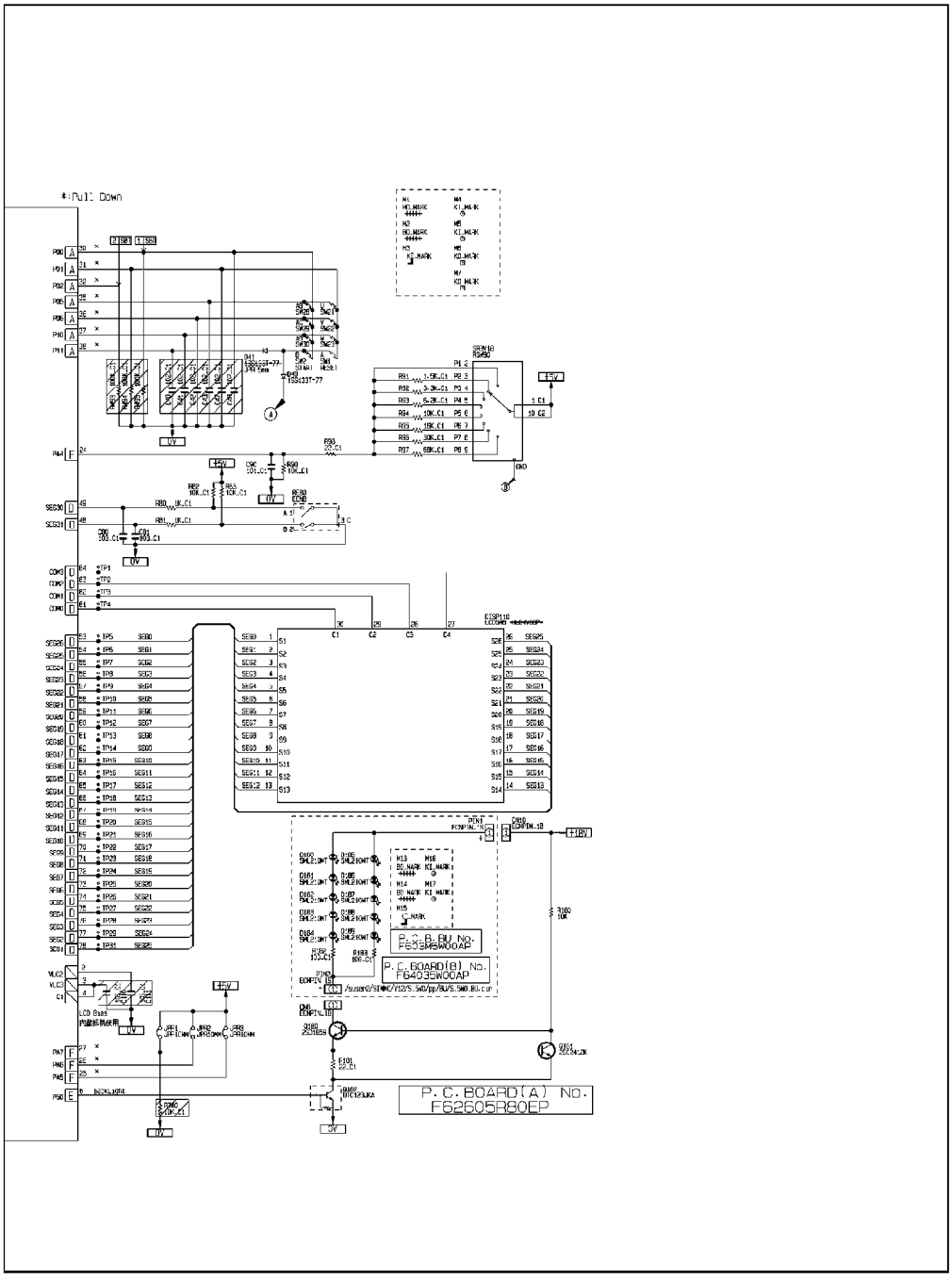
P.C.B.No.	JP44	JP45	JP46	JP41	OSC20	R220
F503_50400?	OPEN	OPEN	OPEN	OPEN	CERAVIC	NO	22
F503_50502?	SHORT	OPEN	OPEN	OPEN	CRISTAL	18P	22
F503_50505MF	OPEN	SHORT	OPEN	OPEN	CERAVIC	NO	22
F503_50505XT	OPEN	OPEN	OPEN	SHORT	CRISTAL	18P	22
F503_50505LF	OPEN	SHORT	OPEN	SHORT	CERAVIC	NO	22
F503_50505MF	OPEN	OPEN	SHORT	OPEN	CERAVIC	NO	22

17. DIGITAL PROGRAMMER CIRCUIT (NN-K593MF)

SCHEMATIC DIAGRAM

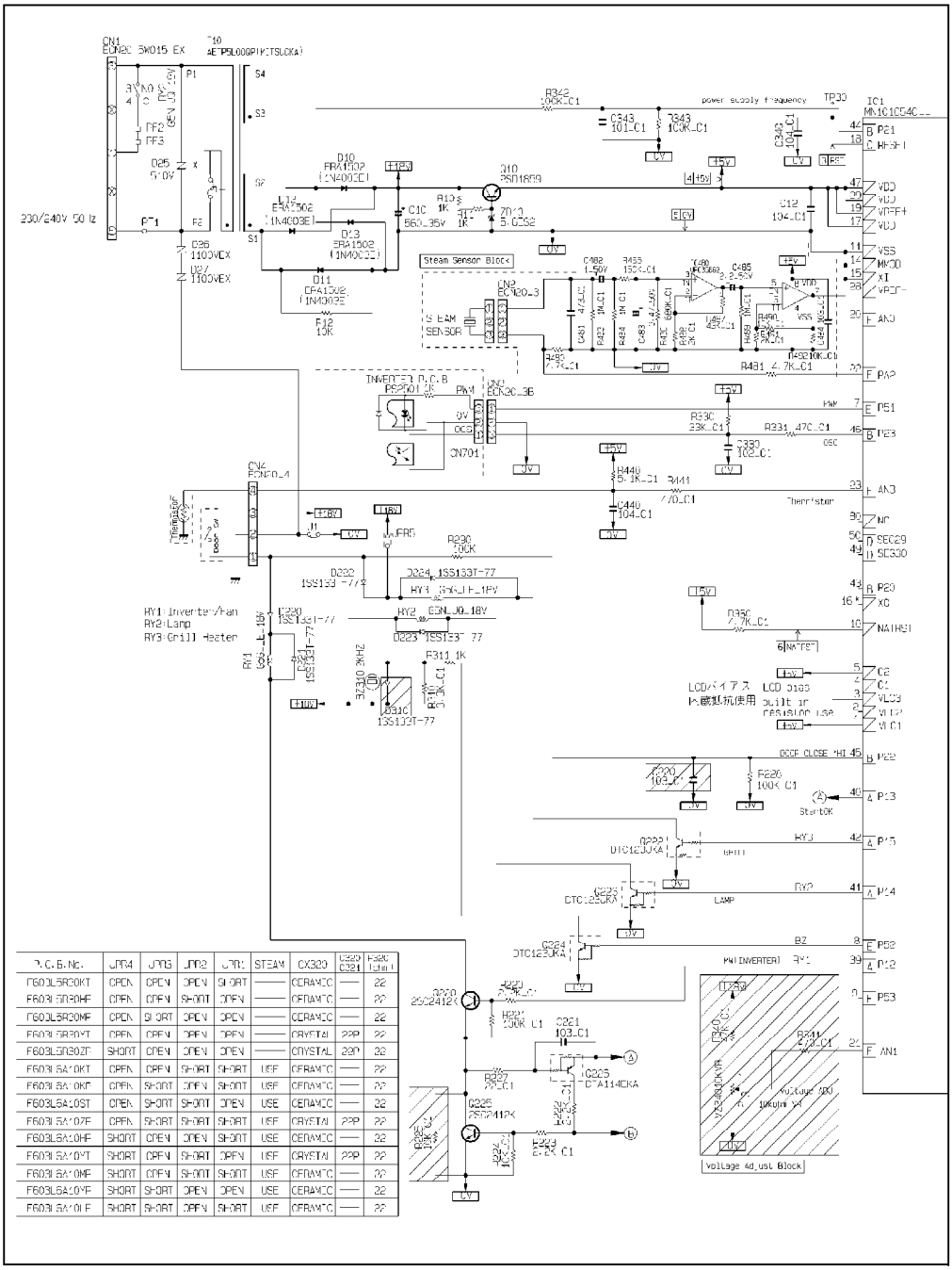


P.C.D.AU No.	JPR3	JPR2	JPR1	CX320	C320 C321	R320 (ohm)	P.C.D.DU No.	PC BOARD (D)
F603L5R90YP	OPEN	OPEN	OPEN	CERAMIC	—	22	F603Y5R90HN	F65555W00AP
F603L5R90HP	OPEN	OPEN	SHORT	CERAMIC	—	22		
F603L5R90YT	OPEN	SHORT	OPEN	CRYSTAL	22P	22		

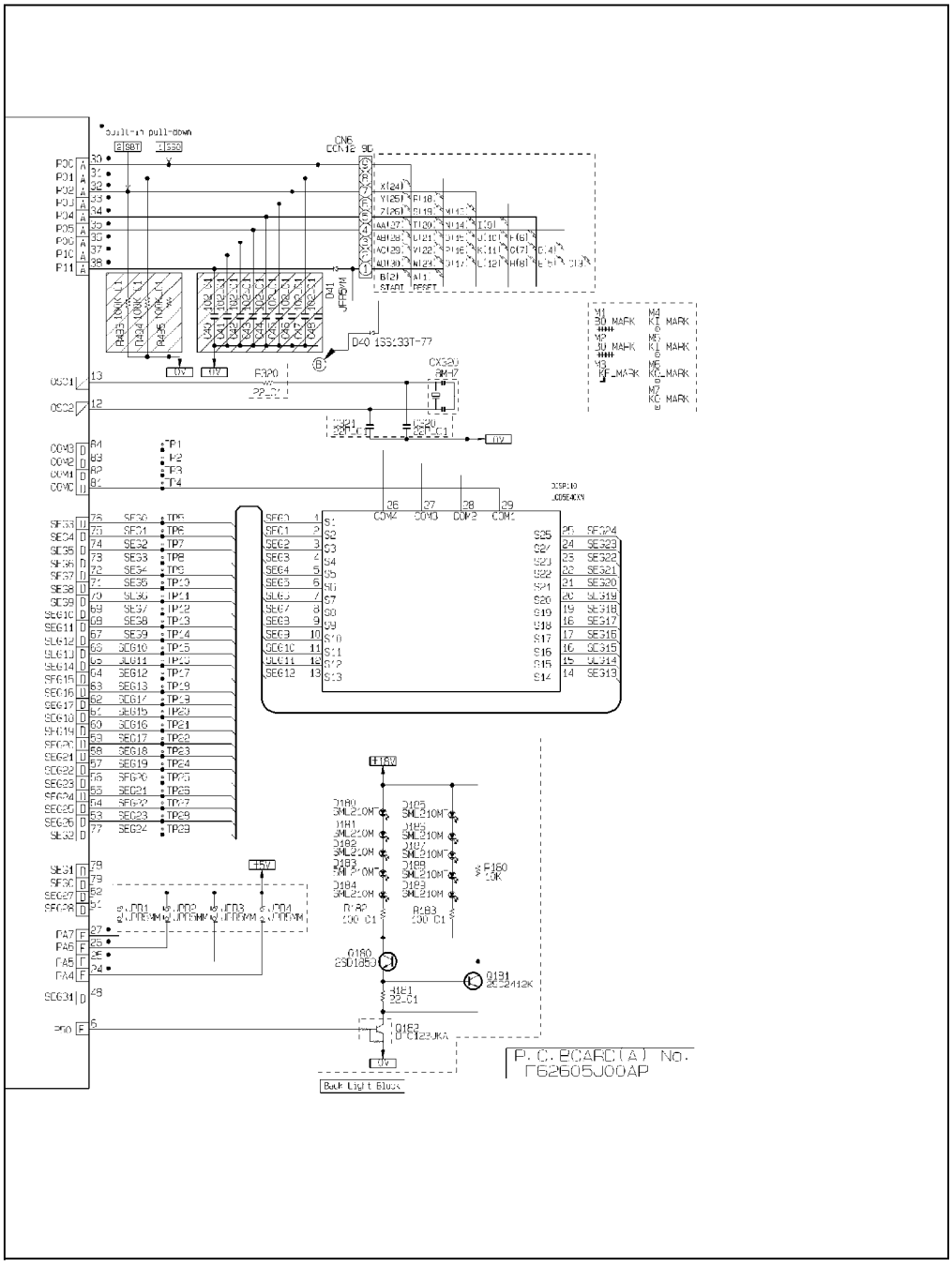


18. DIGITAL PROGRAMMER CIRCUIT (NN-K573/ K543WF)

SCHEMATIC DIAGRAM



P.C.B.No.	JPR4	JPR3	JPR2	JPR1	STEAM	CX320	C320 C321	R320 (ohm)
F603LSR20KT	OPEN	OPEN	OPEN	SHORT	——	CERAMIC	——	22
F603LSR20HE	OPEN	OPEN	SHORT	OPEN	——	CERAMIC	——	22
F603LSR20ME	OPEN	SHORT	OPEN	OPEN	——	CERAMIC	——	22
F603LSR20YT	OPEN	OPEN	OPEN	OPEN	——	CRYSTAL	22P	22
F603LSR20ZT	SHORT	OPEN	OPEN	OPEN	——	CRYSTAL	22P	22
F603LSA10KT	OPEN	OPEN	SHORT	SHORT	USE	CERAMIC	——	22
F603LSA10KE	OPEN	SHORT	OPEN	SHORT	USE	CERAMIC	——	22
F603LSA10ST	OPEN	SHORT	SHORT	OPEN	USE	CERAMIC	——	22
F603LSA10ZE	OPEN	SHORT	SHORT	SHORT	USE	CRYSTAL	22P	22
F603LSA10HE	SHORT	OPEN	OPEN	SHORT	USE	CERAMIC	——	22
F603LSA10YT	SHORT	OPEN	SHORT	OPEN	USE	CRYSTAL	22P	22
F603LSA10ME	SHORT	OPEN	SHORT	SHORT	USE	CERAMIC	——	22
F603LSA10YE	SHORT	SHORT	OPEN	OPEN	USE	CERAMIC	——	22
F603LSA10LE	SHORT	SHORT	OPEN	SHORT	USE	CERAMIC	——	22



19. DIGITAL PROGRAMMER CIRCUIT(EXCEPT NN-K593MF)

PARTS LIST

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBAT2001	BUZZER	1	2.0KHz
C221		AECUU06F103Z	CHIP CAPACITOR	1	0.01 μF/50V
C484		AECUU06F103Z	CHIP CAPACITOR	1	0.01 μF/50V (K573MF)
C343		AECUU06C101J	CHIP CAPACITOR	1	100PF/50V
C12, C340, C440		AECUT06F104Z	CHIP CAPACITOR	3	0.1 μF/25V
C330		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C481		AECUU06F473Z	CHIP CAPACITOR	1	0.047 μF/50V (K573MF)
C320, C321		AECUU06C220J	CHIP CAPACITOR	2	22PF/50V (YTE, ZPE)
C10		AECETK1V561B	AL CHEM CAPACITOR	1	560 μF/35V (K573MF, K543WF)
C482		AECETS1H010B	AL CHEM CAPACITOR	1	1 μF/50V (K573MF)
C483		AECETS1HR47B	AL CHEM CAPACITOR	1	0.47 μF/50V (K573MF)
C485		AECETS1H2R2B	AL CHEM CAPACITOR	1	2.2 μF/50V (K573MF)
CN1		AEEMXH01505W	CONNECTOR	1	5 Pin
CN2		AEEMMF00703W	CONNECTOR	1	3 Pin (K573MF)
CN3		F03524U00AP	CONNECTOR	1	(S453WF, S553WF)
CN3		F03524U50AP	CONNECTOR	1	(K573MF, K543WF)
CN4		AEEMXH00F04W	CONNECTOR	1	4 Pin
CN6		AEEM09FDZBTM	CONNECTOR	1	9 Pin
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz (EXCEPT ZPE & YTE)
CX320		AEYXAT49-8MA	CERAMIC RESONATOR	1	8.0MHz (ZPE, YTE)
DISP110		AEDDHJ5U20XN	LCD	1	(S453WF, S553WF)
DISP110		AEDDHJ5E40XN	LCD	1	(K573MF, K543WF)
DISP1 HOLDER		F66174U20AP	LCD HOLDER	1	(S453WF, S553WF)
DISP1 HOLDER		F66175E40XN	LCD HOLDER	1	(K573MF, K543WF)
		F67525E40XN	DIFFUSION SHEET	1	(K573MF, K543WF)
D10-D13		AESSRCT1A6-E	DIODE	4	
D40, D220, D221, D223		AESS133T-77	DIODE	4	
D222, D224		AESS133T-77	DIODE	2	(K573MF, K543WF)
D25		AERZ511KD10D	VARSITOR	1	
D26, D27		AERZ102KD10A	VARSITOR	2	
D180-D183		AESQPY1112H	CHIP-LED	4	
D184-D189		AESQPY1112H	CHIP-LED	6	(K573MF, K543WF)
IC1		MN101C589EL	L.S.I	1	(S453WF, S553WF)
IC1		MN101C54CEM	L.S.I	1	(K573MF, K543WF)
IC480		AEICUPC358G2	IC	1	(K573MF)
Q226		AESA14EKE	CHIP DIGI-TRANSISTOR	1	
Q182, Q223, Q224		AESC23JKE	CHIP DIGI-TRANSISTOR	3	
Q222		AESC23JKE	CHIP DIGI-TRANSISTOR	1	(K573MF, K543WF)
Q10, Q180		2SD1859TV2Q	TRANSISTOR	2	
Q181, Q220, Q225		2SC2412KT146	CHIP TRANSISTOR	3	
R182, R183		AERJ06J101R	CHIP RESISTOR	2	100 Ω, 1/16W, 5% (K573MF, K543WF)
R224		AERJ06J103R	CHIP RESISTOR	1	10K, 1/16W, 5% (K573MF, K543WF)
R490, R492		AERJ06J103R	CHIP RESISTOR	2	10K, 1/16W, 5% (K573MF)
R226		AERJ06J103R	CHIP RESISTOR	1	10K, 1/16W, 5% (S453WF, S553WF)
R221, R228, R342, R343		AERJ06J104R	CHIP RESISTOR	4	100K, 1/16W, 5%
R483, R484, R489		AERJ06J105R	CHIP RESISTOR	3	1M Ω, 1/16W, 5% (K573MF)
R485		AERJ06J154R	CHIP RESISTOR	1	150K, 1/16W, 5% (K573MF)
R488, R491		AERJ06J202R	CHIP RESISTOR	2	2K, 1/16W, 5% (K573MF)
R320		AERJ06J220R	CHIP RESISTOR	1	22 Ω, 1/16W, 5%
R181, R227		AERJ06J220R	CHIP RESISTOR	2	22 Ω, 1/16W, 5% (K573MF, K543WF)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
R220, R222, R223		AERJ06J222R	CHIP RESISTOR	3	2.2K, 1/16W, 5%
R310		AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/16W, 5%
R330		AERJ06J333R	CHIP RESISTOR	1	33K, 1/16W, 5%
R181		AERJ06J360R	CHIP RESISTOR	1	36 Ω, 1/16W, 5% (S453WF, S553WF)
R487		AERJ06J433R	CHIP RESISTOR	1	43K, 1/16W, 5% (K573MF)
R331, R441		AERJ06J471R	CHIP RESISTOR	2	470 Ω, 1/16W, 5%
R341		AERJ06J471R	CHIP RESISTOR	1	470 Ω, 1/16W, 5% (S453WF, S553WF)
R360, R480, R481		AERJ06J472R	CHIP RESISTOR	3	4.7K, 1/16W, 5%
R340		AERJ06J473R	CHIP RESISTOR	1	47K, 1/16W, 5%
R440		AERJ06J512R	CHIP RESISTOR	1	5.1K, 1/16W, 5%
R486		AERJ06J684R	CHIP RESISTOR	1	680K, 1/16W, 5% (K573MF)
R10, R11, R311		AERDY2TJ102T	CARBON RESISTOR	3	1K, 1/4W, 5%
R12, R180		AERDY2TJ103T	CARBON RESISTOR	2	10K, 1/4W, 5%
R290		AERDY2TJ104T	CARBON RESISTOR	1	100K, 1/4W, 5%
RY1		AEGG5G1A18	POWER RELAY	1	
RY3		AEGG5G1A18	POWER RELAY	1	(K573MF, K543WF)
RY2		AEBJQ1A18	POWER RELAY	1	
T10		AETP5L00QP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	

20. DIGITAL PROGRAMMER CIRCUIT (NN-K593MF)

PARTS LIST

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310		AEFBAT2001	BUZZER	1	2.0KHz
C80, C81, C221, C484, C486		AECUU06F103Z	CHIP CAPACITOR	5	0.01 μF/50V
C90, C343		AECUU06C101J	CHIP CAPACITOR	2	100PF/50V
C12, C222, C340, C440		AECUT06F104Z	CHIP CAPACITOR	4	0.1 μF/25V
C330		AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C320, C321		AECUU06C220J	CHIP CAPACITOR	2	22PF/50V (YTE)
C481		AECUU06F473Z	CHIP CAPACITOR	1	0.047 μF/50V
C483		AECETS1HR47B	CHIP CAPACITOR	1	0.47 μF/50V
C482		AECETS1H010B	CHIP CAPACITOR	1	1 μF/50V
C485		AECETS1H2R2B	CHIP CAPACITOR	1	2.2 μF/50V
C10		AECETK1V561B	AL CHEM CAPACITOR	1	560 μF/35V
C13		AECETS1C220B	AL CHEM CAPACITOR	1	22 μF/16V
CN1		K1KA03A00409	CONNECTOR	1	5 Pin
CN2		AEEMMF00703W	CONNECTOR	1	3 Pin
CN3		F03524U00AP	CONNECTOR	1	
CN4		AEEMXH00F04W	CONNECTOR	1	4 Pin
CN5		AEEM17F9604S	CONNECTOR	1	17 Pin
CN6		AEEM17F9604S	CONNECTOR	1	17 Pin
CX320		AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz (HPE, YPQ)
CX320		AEYXAT49-8MA	CRYSTAL RESONATOR	1	8.0MHz (YTE)
DISP110		AEDDHJ5R80EP	LCD	1	
DISP1 HOLDER		F66175W00AP	LCD HOLDER	1	
		F67525E40XN	DIFFUSION SHEET	1	
D10-D13		AESSRCT1A6-E	DIODE	4	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D40, D220-D225		AESS133T-77	DIODE	7	
D25		AERZ511NS10D	VARSITOR	1	
D26, D27		AERZ102KD10A	VARSITOR	2	
D180-D189		AESQPY1112H	CHIP-LED	10	
PIN1, PIN2		AEPINIPS-1E7		2	
IC1		MN101C54CEL	L.S.I	1	
IC480		AEICUPC358G2	IC	1	
Q226		AESA14EKE	CHIP DIGI-TRANSISTOR	1	
Q182, Q222, Q223, Q224		AESC23JKE	CHIP DIGI-TRANSISTOR	4	
Q10, Q180		2SD1859TV2Q	TRANSISTOR	2	
Q181, Q220, Q225		2SC2412KT146	CHIP TRANSISTOR	3	
SW1, SW2, SW21-SW23, SW28-SW30		EVQ11L05R	SLIGHT TOUCH SWITCH	8	
RSW90		AEVQSRBV18	REVOLVING SWITCH	1	
RE80		AEVQEC16B24	REVOLVING ENCODER	1	
R182, R183		AERJ06J101R	CHIP RESISTOR	2	100 Ω, 1/16W, 5%
R80, R81		AERJ06J102R	CHIP RESISTOR	2	1K, 1/16W, 5%
R82, R83, R90, R94, R224, R490, R492		AERJ06J103R	CHIP RESISTOR	7	10K, 1/16W, 5%
R221, R228, R342, R343		AERJ06J104R	CHIP RESISTOR	4	100K, 1/16W, 5%
R483, R484, R489		AERJ06J105R	CHIP RESISTOR	3	1M, 1/16W, 5%
R91		AERJ06J152R	CHIP RESISTOR	1	1.5K, 1/16W, 5%
R13, R485		AERJ06J154R	CHIP RESISTOR	2	150K, 1/16W, 5%
R95		AERJ06J163R	CHIP RESISTOR	1	16K, 1/16W, 5%
R488, R491		AERJ06J202R	CHIP RESISTOR	2	2K, 1/16W, 5%
R98, R181, R320		AERJ06J220R	CHIP RESISTOR	3	22 Ω, 1/16W, 5%
R220, R222, R223		AERJ06J222R	CHIP RESISTOR	3	2.2K, 1/16W, 5%
R96		AERJ06J303R	CHIP RESISTOR	1	30K, 1/16W, 5%
R92, R310		AERJ06J332R	CHIP RESISTOR	2	3.3K, 1/16W, 5%
R330		AERJ06J333R	CHIP RESISTOR	1	33K, 1/16W, 5%
R487		AERJ06J433R	CHIP RESISTOR	1	43K, 1/16W, 5%
R331, R441, R496		AERJ06J471R	CHIP RESISTOR	3	470 Ω, 1/16W, 5%
R360, R480, R481		AERJ06J472R	CHIP RESISTOR	3	4.7K, 1/16W, 5%
R97		AERJ06J683R	CHIP RESISTOR	1	68K, 1/16W, 4%
R486		AERJ06J684R	CHIP RESISTOR	1	680K, 1/16W, 5%
R440		AERJ06J512R	CHIP RESISTOR	1	5.1K, 1/16W, 5%
R93		AERJ06J622R	CHIP RESISTOR	1	6.2K, 1/16W, 5%
R97		AERJ06J683R	CHIP RESISTOR	1	68K, 1/16W, 5%
R10, R11, R311		AERDY2TJ102T	CARBON RESISTOR	3	1K, 1/4W, 5%
R12, R180		AERDY2TJ103T	CARBON RESISTOR	2	10K, 1/4W, 5%
R290		AERDY2TJ104T	CARBON RESISTOR	1	100K, 1/4W, 5%
RY1, RY3		AEGG5G1A18	POWER RELAY	2	
RY2		AEBJQ1A18	POWER RELAY	1	
T10		AETP5L00QP	LOW VOLTAGE TRANSFORMER	1	
ZD10		AESZMTZJ5R6B	ZENER DIODE	1	

06/03 / S-5Q4, S-5Q6, S-5R3, S-5R9, S-6A1 / Printed in China